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Section 1 Chemical Product and Company Identification

Page E1 of E2



**Aidon
Corporation**

221 Rochester Street
Avon, NY 14414
(585) 226-6177

**CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300**
For laboratory use only.
Not for drug, food or household use.

Product BARIUM CHLORIDE, 0.1 MOLAR SOLUTION

Synonyms Barium Chloride, Aqueous Solution

Section 2 Hazards Identification

Signal word: WARNING

Pictograms: GHS07

Target organs: Cardiovascular and Central nervous systems, Kidneys



GHS Classification:

Acute toxicity, oral (Category 4)

Acute toxicity, inhalation (Category 5)

GHS Label information: Hazard statement:

H302: Harmful if swallowed.

H333: May be harmful if inhaled.

Precautionary statement:

P260: Do not breathe mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.

P304+P312: IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	97.56%	231-791-2
Barium chloride, dihydrate	10326-27-9	2.44%	233-788-1 (anhydrous)

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Barium and soluble compounds, as Ba	TWA: 0.5 mg/m ³ (A4)	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.

Odor: No odor.

Odor threshold: Data not available.

pH: Data not available.

Melting / Freezing point: Approximately 0°C (32°F) (water)

Boiling point: Approximately 100°C (212°F) (water)

Flash point: Data not available

Evaporation rate (Water = 1): <1

Flammability (solid/gas): Data not available.

Explosion limits: Lower / Upper: Data not available

Vapor pressure (mm Hg): 14 (water)

Vapor density (Air = 1): 0.7 (water)

Relative density (Specific gravity): Approximately 1.0 (water)

Solubility(ies): Complete in water.

Partition coefficient: Data not available

Auto-ignition temperature: Data not available

Decomposition temperature: Data not available.

Viscosity: Data not available.

Molecular formula: Mixture

Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatible materials: Bromine trifluoride and 2-furan percarboxylic acid, violent reaction.

Hazardous decomposition products: Chlorine gas, hydrochloric acid and barium oxide, barium dust.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 118 mg/kg [Barium chloride]

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Inhalation may cause irritation of the respiratory tract, sore throat, coughing and labored breathing.

Ingestion: Ingestion may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea.

Skin: Contact with skin may cause redness and pain.

Eyes: Contact with eyes may cause redness, pain and blurred vision.

Signs and symptoms of exposure: May cause tremors, faintness, paralysis of arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death on respiratory failure. Ingestion of 0.8 grams of Barium chloride may be fatal. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: CQ8751000 [Barium chloride]

Toxicity to fish: Leuciscus idus (fish, fresh water), LC50 = 870 mg/L [Barium chloride]

Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 21.9 mg/L/48 hours [Barium chloride]

Toxicity to algae: Chlorella vulgaris (Algae), NOEC = 3.5 mg/L/4 months [Barium chloride]

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

UN/NA number: Not applicable

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: Not applicable

2016 ERG Guide # Not applicable

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Barium chloride	Listed	Not listed	D005	Listed	Not listed

Section 12 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Section 1 Chemical Product and Company Identification

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5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

Boreal Science
399 Vansickle Road
St. Catharines, Ontario
L2S 3T4 Canada
Tel: (800) 387-9393

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product	BARIUM CHLORIDE, ANHYDROUS
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Synonyms	Barium Dichloride
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Section 2 Hazards Identification

Signal word: DANGER**Pictograms:** GHS06**Target organs:** Cardiovascular and Central nervous systems, Kidneys**GHS Classification:**

Acute toxicity, oral (Category 3)

Acute toxicity, inhalation (Category 4)

GHS Label information: Hazard statement:

H301: Toxic if swallowed.

H332: Harmful if inhaled.

Precautionary statement:

P261: Avoid breathing dust.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well-ventilated area.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor.

P330: Rinse mouth.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor if you feel unwell.

P405: Store locked up.

P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Barium chloride, anhydrous	10361-37-2	100%	233-788-1

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Readily absorbs moisture. Keep dry.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Barium and soluble compounds, as Ba	TWA: 0.5 mg/m ³ (A4)	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. White, crystalline powder	Evaporation rate (= 1): Data not available	Partition coefficient: Data not available
Odor: No odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: Data not available
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available.
pH: Data not available.	Vapor pressure (mm Hg): Negligible	Viscosity: Data not available.
Melting / Freezing point: 963°C (1765°F)	Vapor density (Air = 1): 7.21	Molecular formula: BaCl ₂
Boiling point: 1560°C (2840°F)	Relative density (Specific gravity): 3.9	Molecular weight: 208.27
Flash point: Not flammable	Solubility(ies): Soluble in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable **Hazardous polymerization:** Will not occur.

Conditions to avoid: Excessive temperatures and heat.

Incompatible materials: Bromine trifluoride and 2-furan percarboxylic acid, violent reaction.

Hazardous decomposition products: Chlorine gas, hydrochloric acid and barium oxide, barium dust.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 118 mg/kg

Skin corrosion/irritation: Skin-rabbit: Irritant

Serious eye damage/irritation: Eyes-rabbit: Irritant

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Inhalation cause irritation of the respiratory tract, sore throat, coughing and labored breathing.

Ingestion: Ingestion may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea.

Skin: Contact with skin may cause redness and pain.

Eyes: Contact with eyes may cause redness, pain and blurred vision.

Signs and symptoms of exposure: May cause tremors, faintness, paralysis of arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death on respiratory failure. Ingestion of 0.8 grams may be fatal. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: CQ8750000

Section 12 Ecological Information

Toxicity to fish: Leuciscus idus (fish, fresh water), LC50 = 870 mg/L

Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 21.9 mg/L/48 hours

Toxicity to algae: Chlorella vulgaris (Algae), NOEC = 3.5 mg/L/4 months

Persistence and degradability: No data available **Bioaccumulative potential:** No data available

Mobility in soil: No data available **PBT and vPvB assessment:** No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)

UN/NA number: UN1564 **Shipping name:** Barium compounds, n.o.s., (Barium chloride)

Hazard class: 6.1 **Packing group:** III **Reportable Quantity:** No

Exceptions: Limited quantity equal to or less than 5 Kg **2012 ERG Guide #** 154

Marine pollutant: No

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Barium chloride	Listed	Not listed	D005	Listed	Not listed

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Barium Hydroxide, Octahydrate, ACS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Barium Hydroxide, Octahydrate, ACS

Synonyms/Generic Names: Not Available

Product Number: 0700

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect, Harmful by ingestion, Corrosive

Target Organs: Heart, Nerves, Kidney, Gastrointestinal tract, Bone marrow, Spleen, Liver

Signal Words: Danger

Pictograms:



GHS Classification:

Acute toxicity, Oral	Category 4
Skin corrosion	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.

Precautionary Statements:

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.

Potential Health Effects

Eyes	Causes eye burns.
Inhalation	May be harmful if inhaled. Material is extremely destructive to the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Ingestion	Harmful if swallowed. Causes burns.

NFPA Ratings

Health	3
Flammability	0
Reactivity	1
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	0
Reactivity	1
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Barium Hydroxide	>95	12230-71-6	241-234-5	H ₂ BaO ₂ +8H ₂ O	315.46 g/mol

4. FIRST-AID MEASURES

Eyes	In case of eye contact, rinse with plenty of water and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Use flooding quantities of water to cool containers.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (barium oxide) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to a federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Cleanup personnel need personal protection from inhalation and skin/eye contact. Evacuate and ventilate the area. Pick up and arrange disposal without creating dust. Sweep up and place in suitable container for disposal. Keep in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste or cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Provide appropriate exhaust ventilation at places where dust is formed. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Barium Hydroxide	0.5 mg/m ³	PEL	OSHA
	0.5 mg/m ³	TLV	ACGIH
	0.5 mg/m ³	REL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

Personal Protection

Eyes	Wear chemical safety glasses.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear neoprene or nitrile gloves, full body (synthetic) protective clothing appropriate to the risk of exposure.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	White powder
Odor	No Odor
Odor threshold	Not Applicable
pH	12.5 ay 50 g/l at 20°C (68°F)
Melting point/freezing point	78°C (172°F) - lit.
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Relative density	Not Available
Solubility (ies)	Completely soluble in water.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Strong acids
Hazardous Decomposition Products	Carbon oxides, barium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral – rat – 550 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	A4: Not classifiable as a human carcinogen.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Eyes	May cause eye irritation, burns, pain, watering eyes.
Inhalation	Delayed pulmonary edema, burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea. May cause spasm inflammation and edema.
Skin	Burns
Ingestion	Burns, salivation, nausea, vomiting, abdominal pain and labored breathing.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	Not Available
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1564, Barium compounds, n.o.s., (Barium hydroxide), 6.1, pg III
TDG	UN1564, BARIUM COMPOUNDS, N.O.S., (BARIUM HYDROXIDE), 6.1, pg III
IDMG	UN1564, BARIUM COMPOUNDS, N.O.S., (BARIUM HYDROXIDE), 6.1, pg III
Marine Pollutant	No
IATA/ICAO	UN1564, Barium compounds, n.o.s., (Barium hydroxide), 6.1, pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Barium Hydroxide
SARA 312	Barium Hydroxide
SARA 313	Listed: Barium Hydroxide
WHMIS Canada	Class D-2B: Material causing other toxic effects (TOXIC).

16. OTHER INFORMATION

Revision	Date
Revision 1	08-09-2011

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 96.10

Revision Date: March 24, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

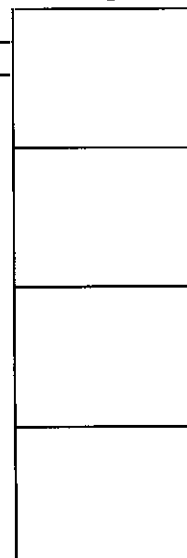
Barium Nitrate Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Acute toxicity, oral (Category 5). May be harmful if swallowed (H303).

Hazard class: Serious eye damage or irritation (Category 2B). Causes eye irritation (H320).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Barium nitrate	10022-31-8	Ba(NO ₃) ₂	261.55	2.6-8.7%
Methylparaben solution	99-76-3	C ₈ H ₈ O ₃	152.16	<0.1%
Water	7732-18-5	H ₂ O	18.00	92% or more

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA Code
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #3. Store with amides, nitrates, nitrites and azides.
Store in a cool, dry place. May explode when heated.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling (P264).
Exposure guidelines: (as barium) PEL/TLV 0.5 mg/m³ (OSHA/ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Clear, colorless solution. Odorless.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with acids, bases, acid anhydrides, reducing agents, organic compounds, moisture, and heat.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Toxic, irritant, diarrhea, nausea, vomiting.	ORL-RAT LD ₅₀ : 355 mg/kg as barium nitrate
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: Heart, nerves, kidneys, GI system, bone marrow, spleen, liver, and blood.	SKN-RBT LD ₅₀ : N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #27h is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Barium Nitrate. Hazard class: 5.1, Oxidizer, Poison. UN number: UN1446.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (233-020-5), RCRA D001, D005.

SECTION 16 — OTHER INFORMATION

This Safety Data Sheet (SDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 24, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 97.00

Revision Date: March 24, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Barium Peroxide

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Oxidizing solids (Category 2). May intensify fire; oxidizer (H272). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral and inhalation (Category 4). Harmful if swallowed or inhaled (H302+H332). Do not eat, drink or smoke when using this product (P270). Avoid breathing dust or fumes (P261).

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Barium peroxide	1304-29-6	BaO ₂	169.34	
Synonym: Barium binoxide				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin: Wash with plenty of water (P302+P352). **If skin irritation occurs:** Get medical advice or attention (P332+P313).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P302+P301+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.

Contact with moisture may produce heat; very strong oxidizer; avoid contact with organic materials. When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher. Take any precautions to avoid mixing with combustibles (P221+P370+P378).

NFPA Code

None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up the spill, place in a sealed bag or container, and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #6. Store with chlorates, bromates, iodates, chlorites, perchloric acid, and peroxides. Store in a cool, dry place. Store in a Flinn Chem-Saf™ bag or in a Flinn Saf-Stor™ can. Use only in a hood or well-ventilated area (P271). Take any precautions to avoid mixing with combustibles (P221).

Keep and store away from clothing and combustible materials (P220).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271).

Exposure guidelines: (as barium) PEL/TLV 0.5 mg/m³ (OSHA/ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Beige powder. Odorless.

Soluble: Acids. Slightly in water.

Boiling point: Loses O₂ at 800 °C

Melting point: 450 °C

Specific gravity: 4.96

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with heat, water, acid, combustible materials, and reducing agents.

Shelf life: Poor, unless kept cool and dry. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Corrosive.

Chronic effects: N.A.

Target organs: Heart, nerves, kidneys, GI system, bone marrow, spleen, and liver.

ORL-RAT LD₅₀: N.A.

IHL-RAT LC₅₀: N.A.

SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

Flinn Suggested Disposal Method #27h is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Barium Peroxide. Hazard class: 5.1, Oxidizer, Poison. UN number: UN1449.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed; EINECS-listed (215-128-4); RCRA D001, D005.

SECTION 16 — OTHER INFORMATION

This Safety Data Sheet (SDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: March 24, 2014

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME Ammonia

PRODUCT Brand Beacon

EMERGENCY TELEPHONE NUMBERS

ISSUE DATE February 1, 2009

DISTRIBUTER Q-PAK CORP. **Transportation:** **(800) 424-9300***
STREET ADDRESS 2145 McCarter Hwy. *for spill, leak, fire or transport accident emergencies
CITY, STATE, ZIP Newark, NJ 07104 **Product Information:** **(973) 483-4404**

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENT	CAS No.	% by wt.	OSHA PEL	EXPOSURE LIMITS	
				ACGIH TLV	NIOSH REL
Ammonium hydroxide	1336-21-6	2.5-4.0	35ppm STEL (As Ammonia)	25ppm TWA	25ppmTWA 35ppm STEL

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Can cause chemical burns. Harmful or fatal if swallowed. Eye contact may cause severe irritation. Vapors are extremely irritating to respiratory tract. NEVER MIX WITH CHLORINE BLEACH OR OTHER CHLORINATED CHEMICALS. TO DO SO WILL RELEASE TOXIC GASES THAT CAN BE FATAL.

POTENTIAL HEALTH EFFECTS

INGESTION.....Can cause severe damage to mouth, throat and stomach, leading to abdominal pain, nausea, vomiting, collapse and possible death.

INHALATION.....Damages airways and lungs. Effects include pulmonary edema, bronchitis, chemical pneumonitis and chronic respiratory disease.

EYE CONTACT.....Severely irritating to the eyes. May cause permanent corneal damage, including perforation, ulceration and blindness.

SKIN CONTACT....Can cause severe skin burns with possible blistering and tissue destruction.

SECTION 4 – FIRST AID MEASURES

INGESTION.....If swallowed DO NOT induce vomiting. Immediately drink a large quantity of water. Follow with citrus juice if available. Never give anything by mouth to an unconscious person. **Get medical attention immediately.**

INHALATION.....If exposed to excessive levels of vapors, remove to fresh air and give artificial respiration if not breathing. The most dangerous consequence of exposure to high levels of ammonia is pulmonary edema; for severe contact, **Get immediate medical attention.**

EYE CONTACT.....Immediately flush eye with plenty of cool, running water. Remove contact lenses if applicable, and continue flushing for at least 15 minutes, holding eyelids apart to ensure thorough rinsing of the entire eye. **Speed is essential to minimize injury. Call a physician immediately.**

SKIN CONTACT...Immediately flush skin with plenty of cool running water for at least 15 minutes. Wash with soap and water. If irritation develops or persists, get medical attention. Remove contaminated clothing and shoes; wash before reuse.

NOTE TO PHYSICIAN.....Information pertaining to ingestion toxicology, therapy, symptomatology and treatment can be found in Clinical Toxicology of Commercial Products, authored by Gosselin, Smith and Hodge and published by Williams & Wilkins, Baltimore, Maryland. **See listing for Ammonia in Therapeutics Index, Section III.**

SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT / METHOD.....None/N.A.

FLAMMABLE LIMITS Lower: 16%;Upper:25%
Decomposes at 928F.

EXTINGUISHING MEDIA.....If involved in a fire, use carbon dioxide, dry chemical or water spray

SPECIAL FIRE FIGHTING PROCEDURES...Fire fighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Use water spray to keep fire-exposed containers cool. Use water fog or spray to remove generated ammonia gas from the atmosphere

FIRE AND EXPLOSION HAZARDS.....Ammonia gas will be liberated at all temperatures, which can be explosive under confined space conditions. Contact between this product and concentrated mineral acids will cause instant boiling and a possible explosion.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

RESPONSE TO SPILLS.....Small spills: Mop up residue and rinse area thoroughly with water. Dike or dam spill. Pump to containers or soak up on inert absorbent. **Use personal protective equipment and stay upwind of spill.**

SECTION 7 – HANDLING AND STORAGE

HANDLING.....Product is a strongly alkaline material; handle with care, as for all strong chemicals. Keep container tightly closed when not in use. Handle empty containers as if full, due to presence of residual ammonia vapors. Wash thoroughly after handling. **NEVER MIX WITH CHLORINE BLEACH OR OTHER CHLORINATED CHEMICALS. TO DO SO WILL RELEASE TOXIC GASES THAT CAN BE FATAL.**

PRECAUTIONS

STORAGE.....Store in a cool, dry, well-ventilated place. Keep away from bleach and acidic materials. Keep from freezing.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

HYGIENIC PRACTICES.....Observe label precautions; use personal protective equipment. **Avoid breathing vapors of this product.**

ENGINEERING CONTROLS.....Local exhaust ventilation may be required to keep vapors within exposure limits. **Facilities using this product must be equipped with an eyewash station.**

PERSONAL PROTECTIVE EQUIPMENT

X	RESPIRATOR	Use NIOSH approved respirator if exposure exceeds PEL or TLV limits.
X	GOGGLES / FACE SHIELD	Chemical splash goggles required; also use face shield if exposure is severe
X	APRON	Recommended; PVC, Neoprene or Vinyl acceptable
X	GLOVES	Recommended; use impervious PVC or Neoprene with long Gauntlet.
X	BOOTS	Recommended to protect shoes and feet when using product for floor cleaning.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear colorless liquid	BOILING POINT	212 deg F
ODOR	Pungent Ammonia	FREEZING POINT	32 deg F
pH	11.5 (100% concentrate)	VAPOR PRESSURE	Not established
SPECIFIC	0.980	VAPOR PRESSURE	Not established

SOLUBILITY	Complete	EVAPORATION RATE	Not determined
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MSDS **PRODUCT** Ammonia **CODE** **PAGE 4 OF 5**

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY	STABLE	<input checked="" type="checkbox"/>	UNSTABLE
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CONDITIONS TO AVOID **NEVER MIX with hot water or chlorine bleach.** Avoid contact with acids or alkalies, oxidizing materials, copper, aluminum, zinc and galvanized metals.

INCOMPATIBILITY Contact with strong acids produces exothermic, possibly violent reaction. Contact with strong alkalies promotes the evolution of ammonia gas.

HAZARDOUS PRODUCTS..Ammonia gas and oxides of nitrogen.
OF DECOMPOSITION Chloramines—from contact with hypochlorite bleach.

POLYMERIZATION	WILL NOT OCCUR	<input checked="" type="checkbox"/>	MAY OCCUR
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CONDITIONS TO AOID Not applicable

SECTION 11 – TOXICOLOGICAL INFORMATION

CARCINOGENICITY
 THIS PRODUCT CONTAINS A KNOWN OR SUSPECTED CARCINOGEN
 THIS PRODUCT DOES NOT CONTAIN ANY KNOWN OR ANTICIPATED CARCINOGENS ACCORDING TO THE CRITERIA OF THE NTP ANNUAL REPORT ON CARCINOGENS AND OSHA 29 CFR 1910.Z

OTHER EFFECTS
ACUTE Strongly irritating to all tissues on exposure.
CHRONIC Not determined

SECTION 12 – ECOLOGICAL INFORMATION

BIODEGRADABILITY	Considered Biodegradable	<input checked="" type="checkbox"/>	Not Biodegradable
BOD / COD VALUE	Not Established		
ECOTOXICITY	No data available		

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....Small amounts of unused product may be flushed safely to the sanitary sewer with plenty of water. Contact local water board before flushing large amounts. If solidified, large amounts may be disposed of in a sanitary landfill. Contact state or local authorities for additional restrictions.

MSDS PRODUCT Ammonia CODE PAGE 5 OF 5

RCRA CLASSIFICATION.....Non-hazardous	
RECYCLE CONTAINER	YES X CODE 2 - HDPE NO

SECTION 14 - TRANSPORT INFORMATION

DOT CLASSIFICATION	HAZARDOUS	NOT HAZARDOUS X
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DESCRIPTION NOT APPLICABLE

HM CODE	NONE
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SECTION 15 - REGULATORY INFORMATION

REGULATORY STATUS	
EPA REGISTERED (UNDER FIFRA)	
FDA REGULATED	
KOSHER	
SARA TITLE III MATERIAL	X--Section 304
USDA AUTHORIZED	

SECTION 16 - OTHER INFORMATION

NFPA CLASSIFICATION

1	BLUE	HEALTH HAZARD
0	RED	FLAMMABILITY
0	YELLOW	REACTIVITY
--	WHITE	SPECIAL HAZARD

Information contained in this MSDS refers only to the specific material designated and does not relate to any process or use involving other materials. This information is based on data believed to be reliable, and the Product is intended to be used in a manner that is customary and reasonably foreseeable. Since actual use and handling are beyond our control, no warranty, express or implied, is made and no liability is assumed by Q-Pak Corporation in connection with the use of this information.

Safety Data Sheet

Benedict's Solution, Qualitative

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Benedict's Solution, Qualitative

Recommended Use: Science education applications

Synonyms: None known.

Distributor: Carolina Biological Supply Company
2700 York Road, Burlington, NC 27215
1-800-227-1150

Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)

Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING



Harmful if inhaled. Harmful to aquatic life.

GHS Classification:

Hazardous to the aquatic environment - Acute Category 3, Acute Toxicity - Inhalation Vapor Category 4

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	74.7
Sodium Citrate, Dihydrate	6132-04-3	15.1
Sodium Carbonate, Anhydrous	497-19-8	8.7
Copper (II) Sulfate, 5-Hydrate	7758-99-8	1.5

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.

Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Section 6 Spill or Leak Procedures

Safety Data Sheet

Steps to Take in Case Material Is Released or Spilled:

No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this (M)SDS. Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7

Handling and Storage

Handling: Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid contact with skin and eyes. Keep away from oxidizing materials and strong acids. Avoid contact with clothing. Do not breathe gas/fumes/vapor/spray. Harmful if swallowed. After contact with skin, wash immediately with plenty of water.

Storage: Keep container tightly closed in a cool, well-ventilated place.

Storage Code: Green - general chemical storage

Section 8

Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Sodium Citrate, Dihydrate	N/A	N/A	N/A	N/A
Sodium Carbonate, Anhydrous	N/A	N/A	N/A	N/A
Copper (II) Sulfate, 5-Hydrate	1 mg/m ³ TWA (dust and mist, as Cu)	N/A	N/A	N/A

Control Parameters

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Personal Protective Equipment (PPE): Lab coat, apron, eye wash, safety shower.

Respiratory Protection: No respiratory protection required under normal conditions of use.

Respirator Type(s): None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

Eye Protection: Wear chemical splash goggles when handling this product. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: No information available

Section 9

Physical Data

Formula: See Section 3

Molecular Weight: No data available

Appearance: Colorless Blue Liquid

Odor: None

Odor Threshold: No data available

pH: No data available

Melting Point: No data available

Boiling Point: Estimated 100 C 100 C

Flash Point: No data available

Flammable Limits in Air: No data available

Vapor Pressure: No data available

Evaporation Rate (BuAc=1): No data available

Vapor Density (Air=1): No data available

Specific Gravity: No data available

Solubility in Water: Soluble

Log Pow (calculated): No data available

Autoignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Percent Volatile by Volume: No data available

Safety Data Sheet

Section 10

Reactivity Data

Reactivity:	Not generally reactive under normal conditions.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	None known.
Incompatible Materials:	Water-reactive materials, Strong oxidizing agents, Hot Aluminum, Strong acids, Strong reducing agents, Hydroxylamine, Hypobromite, Magnesium
Hazardous Polymerization:	Will not occur

Section 11

Toxicity Data

Symptoms (Acute):	Alkalosis, Respiratory Irritation, Drooling
Delayed Effects:	No data available

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		
Sodium Citrate, Dihydrate	6132-04-3	No data available	No data available	No data available
Sodium Carbonate, Anhydrous	497-19-8	Oral LD50 Rat 4090 mg/kg Oral LD50 Mouse 6600 mg/kg		INHALATION LC50 Rat 2300 MG/M3 INHALATION LC50 Mouse 1200 MG/M3 INHALATION LC50 GUINEA PIG 800 MG/M3
Copper (II) Sulfate, 5-Hydrate	7758-99-8	Oral LD50 Rat = 300 mg/kg	Dermal LD50 Rat > 2000 mg/kg	

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
Sodium Citrate, Dihydrate	6132-04-3	Not listed	Not listed	Not listed

Chronic Effects:

Mutagenicity:	No evidence of a mutagenic effect.
Teratogenicity:	No evidence of a teratogenic effect (birth defect).
Sensitization:	No evidence of a sensitization effect.
Reproductive:	No evidence of negative reproductive effects.
Target Organ Effects:	
Acute:	No information available
Chronic:	No data available

Section 12

Ecological Data

Overview:	Slight ecological hazard. In high concentrations, this product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	Dissolved into water, Adsorbs to soil., Chemically Transformed
Bioaccumulation:	No data
Degradability:	No data
Other Adverse Effects:	No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Sodium Citrate, Dihydrate	6132-04-3	Not available

Safety Data Sheet

Sodium Carbonate, Anhydrous	497-19-8	96 HR LC50 LEPOMIS MACROCHIRUS 300 MG/L [STATIC] 48 HR EC50 DAPHNIA MAGNA 265 MG/L 120 HR EC50 NITZSCHIA 242 MG/L
Copper (II) Sulfate, 5-Hydrate	7758-99-8	96 HR LC50 PIMEPHALES PROMELAS 0.6752 MG/L [STATIC]

Section 13

Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s): Not Determined

Section 14

Transport Information

Ground - DOT Proper Shipping Name:
Not regulated for transport by US DOT.

Air - IATA Proper Shipping Name:
Not regulated for air transport by IATA.

Section 15

Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Sodium Citrate, Dihydrate	6132-04-3	No	No	No	No	No
Sodium Carbonate, Anhydrous	497-19-8	No	No	No	No	No
Copper (II) Sulfate, 5-hydrate	7758-99-8	No	No	No	No	No

California Prop 65:

No California Proposition 65 ingredients

Section 16

Additional Information

Revised: 08/21/2018

Replaces: 06/15/2018

Printed: 08-25-2018

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health

Section 1 Chemical Product and Company Information

Page E1 of E2



5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BENZOIC ACID
Synonyms Benzenecarboxylic Acid

Section 2 Hazards Identification

Signal word: WARNING
Pictograms: GHS07
Target organs: None known



GHS Classification:
Acute toxicity, oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2B)

GHS Label information: Hazard statement:
H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.

Precautionary statement:

P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P332+P313: If skin irritation occurs: Get medical attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Benzoic acid	65-85-0	100%	200-618-2

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts or vapors. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Benzoic acid	Not established	Not established	Not established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid, white crystals.	Evaporation rate (= 1): Data not available	Partition coefficient: Data not available
Odor: Odor of benzaldehyde or benzoic.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: 573°C (1065°F)
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available.
pH: Data not available.	Vapor pressure (mm Hg): 1 mm @ 96° (sublimes)	Viscosity: Data not available.
Melting / Freezing point: 121°C (249°F)	Vapor density (Air = 1): 4.21	Molecular formula: C ₆ H ₅ COOH
Boiling point: 249°C (480°F)	Relative density (Specific gravity): 1.321	Molecular weight: 122.12
Flash point: 121-131°C (249-267°F) CC	Solubility(ies): Slightly soluble in water (0.34 g/100ml)	

Section 10 Stability & Reactivity

Chemical stability: Stable **Hazardous polymerization:** Will not occur.

Conditions to avoid: Excessive temperatures and heat.

Incompatible materials: Strong oxidizing agents, strong bases, alkalis.

Hazardous decomposition products: Toxic vapors and gases including phenol, benzene and carbon monoxide.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 1700 mg/kg ; Inhalation-rat LC50: 0.026 mg/L/1hour (vapor, no mortality)

Skin corrosion/irritation: Skin-rabbit - Slight irritant

Serious eye damage/irritation: Eyes-rabbit - Severe irritant

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Inhalation may cause cough and sore throat.

Ingestion: Ingestion causes abdominal pain, nausea and vomiting.

Skin: Contact with skin causes irritation with redness, itching, and burning sensation.

Eyes: Contact with eyes causes severe irritation with redness and pain.

Signs and symptoms of exposure: See Potential health effects above. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: DG0875000

Section 12 Ecological Information

Toxicity to fish: Carassius auratus (fish, fresh water), LC100 = 200 mg/L/7-96 hours

Toxicity to daphnia and other aquatic invertebrates: Daphnia magna (Crustacea), EC50 = 300 mg/L/24 hours

Toxicity to algae: Anabaena cylindrica (Algae), EC50 = 60 mg/L/3 hours

Persistence and degradability: No data available **Bioaccumulative potential:** No data available

Mobility in soil: No data available **PBT and vPvB assessment:** No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information (US DOT / CANADA TDG)


UN/NA number: Not applicable **Shipping name:** Not Regulated

Hazard class: Not applicable **Packing group:** Not applicable **Reportable Quantity:** Yes **Marine pollutant:** No

Exceptions: Not applicable **2012 ERG Guide #:** Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Benzoic acid	Listed	5000 lbs (2270 kg)	Not listed	Listed	Not listed	 D2B

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SAFETY DATA SHEET

Issuing Date 05-May-2015

Revision Date 05-May-2015

Revision Number 3

Union Rubber, Inc. Best-Test Paper and Rubber Cement

Product identifier

Product Name Paper / Rubber Cement

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Glue, Liquid

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name Union Rubber, Inc.

Supplier Address PO Box 1040
Trenton, NJ 08606
US

Supplier Phone Number Phone: 609-396-9328
Fax: 609-396-3587

Supplier Email besttest@sprynet.com

Emergency telephone number 800-222-1222

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1

Flammable liquids

Category 2

GHS Label elements, including precautionary statements**Emergency Overview****Signal word****Danger****Hazard Statements**

Causes skin irritation

May cause drowsiness or dizziness

May be fatal if swallowed and enters airways

Highly flammable liquid and vapor

**Appearance** Straw-colored**Physical state** Viscous Liquid**Odor** Pleasant**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ ventilating/ lighting/ equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Keep cool

Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label)

Skin

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

FireIn case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

12.92% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful in contact with skin
Very toxic to aquatic life with long lasting effects
PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION

Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

Composition and Concentration of Ingredients

Chemical Name	CAS No	Weight-%	Trade Secret
Heptane	142-82-5	60 - 100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

First Aid Measures**First aid measures****General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.

Skin contact

Get medical attention if irritation develops and persists. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

Ingestion Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Aspiration hazard if swallowed - can enter lungs and cause damage. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Call a physician or poison control center immediately.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Remove all sources of ignition.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Uniform Fire Code

Irritant: Liquid
Flammable Liquid: I-B

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

ACCIDENTAL RELEASES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. See section 8 for more information. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other Information

Refer to protective measures listed in Sections 7 and 8. Ventilate the area.

Environmental precautions**Environmental precautions**

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up

Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Precautions for safe handling**Handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions.

Conditions for safe storage, including any incompatibilities**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

Incompatible Products

Strong acids. Strong oxidizing agents. Strong bases.

8 EXPOSURE CONTROLS, SAFETY AND HEALTH PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Heptane 142-82-5	STEL: 500 ppm TWA: 400 ppm	TWA: 500 ppm TWA: 2000 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 1600 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 2000 mg/m ³	IDLH: 750 ppm Ceiling: 440 ppm 15 min Ceiling: 1800 mg/m ³ 15 min TWA: 85 ppm TWA: 350 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing safety goggles.

Skin and body protection

Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves. Chemical resistant apron. Antistatic boots.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state

Viscous Liquid

Appearance

Straw-colored

Color

No information available

Odor

Pleasant

Odor Threshold

No information available

Property

Values

Remarks Method

pH

7

None known

Melting / freezing point

No data available

None known

Boiling point / boiling range

100 °C / 212 °F

None known

Flash Point

-7 C / 20 F

None known

Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	No information available	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	6.5	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products

Carbon oxides.

Information on likely routes of exposure**Product Information**

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause drowsiness and dizziness.
Eye contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause

irritation.

Skin contact

Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Repeated exposure may cause skin dryness or cracking.

Ingestion

Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Heptane 142-82-5	-	= 3000 mg/kg (Rabbit)	= 103 g/m ³ (Rat) 4 h

Information on toxicological effects**Symptoms**

Erythema (skin redness). May cause redness and tearing of the eyes. Difficulty in breathing. Coughing and/ or wheezing. Asthma-like and/ or skin allergy-like symptoms. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Sensitization**

No information available.

Mutagenic Effects

No information available.

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Chronic Toxicity

Aspiration may cause pulmonary edema and pneumonitis.

Target Organ Effects

Respiratory system. Eyes. Skin. Central Nervous System (CNS).

Aspiration Hazard

No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (dermal)

3,003.00 mg/kg (ATE)

ATEmix (inhalation-dust/mist)

103.00 mg/l

ECOTOXICOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Heptane 142-82-5		96h LC50: = 375.0 mg/L (Cichlid fish)		24h EC50: > 10 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

Chemical Name	Log Pow
Heptane 142-82-5	4.66

Other adverse effects

No information available.

HAZARDOUS WASTE CONSIDERATIONS**Waste treatment methods**

Disposal methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated Packaging	Dispose of contents/containers in accordance with local regulations.
US EPA Waste Number	D001 U004

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Heptane 142-82-5	Toxic Ignitable

TRANSPORT INFORMATION

<u>DOT</u>	NOT REGULATED
Proper Shipping Name	NON REGULATED
Hazard Class	N/A
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated

IATA
 Proper Shipping Name Not regulated
 Hazard Class NON REGULATED
 N/A

IMDG/IMO
 Hazard Class Not regulated
 N/A
 Marine Pollutant Product is a marine pollutant according to the criteria set by IMDG/IMO

RID Not regulated

ADR Not regulated

ADN Not regulated



International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
---------------	------------	---------------	--------------	--------------	----------

Heptane 142-82-5	X	X	X		
Isopropyl alcohol 67-63-0	X	X	X	X	
Acetophenone 98-86-2	X	X	X	X	X

International Regulations**Mexico****National occupational exposure limits**

Component	Carcinogen Status	Exposure Limits
Heptane 142-82-5 (60 - 100)		Mexico: TWA 400 ppm Mexico: TWA 1600 mg/m ³ Mexico: STEL 500 ppm Mexico: STEL 2000 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada**WHMIS Hazard Class**

B2 - Flammable liquid

D2B - Toxic materials



NFPA	Health Hazards 2	Flammability 3	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 2	Flammability 3	Physical Hazard 0	Personal Protection X

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 05-May-2015
Revision Date 05-May-2015
Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product Identifier
Product Form : Mixture
Product Name : Bioclean
Product Code : 7131-1
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture : Enzyme
- 1.3 Details of the supplier of the safety data sheet
Twi-Laq Industries, Inc.
1345 Seneca Avenue
Bronx, NY 10474
T (718) 638-5860
- 1.4 Emergency telephone number
Emergency number : CHEM-TREC 1-800-424-9300

SECTION 2: Hazards Identification

- 2.1 Classification of the substance or mixture
Classification (GHS-US)
Not Classified
- 2.2 Label Elements
GHS-US labeling
No Labeling Applicable
- 2.3 Other Hazards
No additional information available
- 2.4 Unknown Acute Toxicity
No Data Available

SECTION 3: Composition / Information on Ingredients

- 3.1 Substance
Not Applicable
- 3.2 Mixture

SECTION 4: First Aid Measures

- 4.1 Description of First Aid measures
First Aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advise (show the label where possible).
First Aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
First Aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First Aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain blinking or redness persists.
First Aid measures after ingestion : Rinse mouth. DO NOT induce vomiting. Obtain emergency medical attention.
- 4.2 Most important symptoms and effects, both acute and delayed
Symptoms / injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
- 4.3 Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting Measures

- 5.1 Extinguishing Media
Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.
- 5.2 Special hazards arising from the substance or mixture
No additional information available
- 5.3 Advice for firefighters
Firefighting Instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

BIOCLEAN**Safety Data Sheet**

according to Federal Register / Col. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel

6.1.2 For emergency responders

Protective Equipment : Equip cleanup crew with proper protection

Emergency procedures : Ventilate area.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up. : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep closed when not in use.

Incompatible Products : Strong bases. Strong acids.

Incompatible Materials : Sources of ignition. Direct sunlight.

7.3 Specific end use(s)

No additional information available

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

No additional information available

8.2 Exposure controls

Personal Protective Equipment : Avoid unnecessary exposure.

Hand Protection : Wear protective gloves.

Eye Protection : Chemical goggles or safety glasses

Respiratory Protection : Not required with expected use. If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

Other Information

: Do not eat, drink or smoke during use.

Engineering Controls

: Provide good general ventilation. If work practices generate dust, fumes, gas, vapors, or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid
 Color : Yellow
 Odor : Lemon / Citrus
 Odor Threshold : No data available
 pH : 5-7
 Evaporation rate (butyl acetate=1) : No data available
 Melting Point : No data available
 Freezing Point : No data available
 Boiling Point : 212° - 220°F
 Flash Point : ≥ 220°F
 Auto-ignition temperature : No data available
 Decomposition temperature : No data available
 Flammability (solid, gas) : No data available
 Vapor Pressure : No data available
 Relative vapor density (@ 20 °C) : Similar to water
 Relative density : 1.006
 Solubility : Soluble in Water
 Log Pow : No data available
 Log Kow : No data available
 Viscosity, kinematic : No data available
 Viscosity, dynamic : No data available
 Explosive Properties : No data available
 Oxidizing Properties : No data available
 Explosive Limits : No data available

BIOCLEAN**Safety Data Sheet**

according to Federal Register / Col. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 10: Stability and Reactivity

10.1 Reactivity

This material is considered to be non-reactive under normal conditions of use.

10.2 Chemical Stability

Stable under normal Conditions

10.3 Possibility or hazardous reactions

Not established

10.4 Conditions to avoid

Direct sunlight. Extremes of temperature.

10.5 Incompatible materials

Strong acids. Strong bases

10.6 Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity	: Not classified
Skin corrosion / irritation	: Not classified (pH 5-7)
Serious eye damage / irritation	: Not classified (pH 5-7)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive Toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available date, the classification criteria are not met.

SECTION 12: Ecological Information

12.1 Ecotoxicity

No additional information available

12.2 Persistence and degradability

Bioclean	
Persistence and degradability	Not established

12.3 Bioaccumulative potential

Bioclean	
Bioaccumulative potential	Not established

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

Effect on ozone later	: No information available
Effect on the global warming	: No known ecological damage caused by this product
Other information	: Avoid release to the environment.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

Disposal of Wastes	: Dispose of in a safe manner in accordance with federal, state and local regulations
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport Information

DOI	: Not regulated
Proper Shipping name	: Non-Hazardous Products
Additional Information	
Other information	: No supplementary information available.
ADR	
Transport documentation description	: Cleaning Compounds
Transport by sea	: No additional information available
Air transport	: No additional information available

BIOCLEAN

Safety Data Sheet

according to Federal Register / Col. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 15: Regulatory Information

15.1 US Federal regulations

Bioclean
Not listed on the United States TSCA (Toxic Substances Control Act) Not established

15.2 International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008[CLP]

Not Classified

Classification according to Directive 67/548/EEC or 1999/45/EC

Not Classified

15.2.2 National regulations

No additional information available

15.3 US State regulations

No additional information available.

SECTION 16: Other Information

Revision Date : 5/27/2015
Reasons for Revisions : No information available.
Other Information : None

HMIS III Rating

Health : 1 Slight Hazard - irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard
Personal Protection : B

NOTICE: NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE WITH RESPECT TO INFORMATION CONCERNING THE PRODUCT REFERRED TO IN THIS MATERIAL SAFETY DATA SHEET.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. The information and recommendation contained in this Safety Data Sheet are supplied pursuant to Federal Register / Col. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations of the Occupational Safety and Health Standards Hazard Communication Rule. The information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof. Twi-Laq Industries, Inc., however, makes no representations as to the completeness or accuracy thereof, and information is supplied upon the express condition that the persons receiving the same will be required to make their own determination as to its suitability for their purposes prior to use. In no event will Twi-Laq Industries, Inc. be responsible for any damages of any nature whatsoever resulting from the use of, reliance upon, or the misuse of this information. The information as supplied herein is simply to be informative and intended solely to alert the user of the substance which is the subject matter of this Material Safety Data Sheet. The ultimate compliance with federal, state and local regulations concerning the use or disposal of this compound, or compliance with respect to products liability, rests solely upon the purchaser thereof.

SAFETY DATA SHEET

SECTION 1 : PRODUCT IDENTIFICATION



Product Name : Bioesque Botanical Disinfectant Solution

Product Use : Surface Disinfectant

Scent: Lemongrass Grapefruit

Supplier: Natureal, LLC

Address: 150 East Palmetto Park Road, Suite 150, Boca Raton, FL 33432

Telephone: 954-895-7867

Emergency phone: (866) 898-0697

E-Mail: info@bioesquesolutions.com

Web site: www.bioesquesolutions.com

SECTION 2 : HAZARD IDENTIFICATION

WHMIS Class : Exempt

TSCA: All the ingredients are listed or exempt from listing on the Chemical Substance Inventory.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS#</u>	<u>Wt %</u>	<u>TLV</u>	<u>LC₅₀</u>	<u>LD₅₀</u>
Thymol	89-83-8	0.23	N/A	N/A	980 mg/Kg (oral, rat)

SECTION 4 : FIRST AID MEASURES

Eye: Remove contact lenses. Rinse with plenty of water for several minutes, keeping eyelids open.

Skin: Rinse with water. Remove spoiled clothes and wash before wearing.

Inhalation : N/A

Ingestion: Seek medical attention if large quantities are ingested.

SECTION 5 : FIRE FIGHTING MEASURES

Flammability : No

Flash Point (ASTM D-93, °C) : >100

Hazardous Combustion Products: Carbon oxides, sulfur oxides.

Suitable extinguishing media: As per surrounding fire.

Special Fire Fighting Procedure: As per surrounding fire.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedure: Stop leak, Rinse to drain or absorb with non-reactive adsorbent and dispose according to existing federal, state, provincial and municipal regulations. Resume cleaning by rinsing with water.

SECTION 7 : HANDLING AND STORAGE

Handling: Follow standard safe handling of materials. Keep out of reach of children.

Storage Requirements: Keep in original tightly closed containers, in a room below 30 °C.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Follow standard safe handling of materials.

SECTION 9 : PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (°C) : 100
Vapor Pressure (mm Hg) : N/A
Vapor Density (Air = 1) : N/A
Solubility in water : complete
Physical State : liquid
Appearance: transparent to translucent
Odour: spicy scent

Density (g/mL): 0.999 at 23 °C
VOC (Wt %) : calculated approx. <1%
Evaporation Rate (Water + 1) : water like
pH (as supplied) : 7.0 to 8.5
Viscosity : water like
Odour Threshold (ppm) : N/A

SECTION 10 : STABILITY AND REACTIVITY DATA

Conditions for Chemical Instability: This product is stable under normal conditions. It does not polymerize.

Conditions to Avoid: Excessive heat.

Incompatible Materials: Strong oxidizing agents, strong alkalis, strong acids.

Hazardous Decomposition Products: The thermal decomposition can produce carbon and sulfur oxides and other organic substances.

SECTION 11 : TOXICOLOGICAL INFORMATION

Routes of Entry: Eyes, skin, ingestion, inhalation.

EFFECTS OF ACUTE EXPOSURE :

Acute Oral Toxicity: LD50:>5000 mg/Kg (EPA Category IV).

Acute Dermal Toxicity: LD50:>5000 mg/Kg (EPA Category IV).

Acute Inhalation Toxicity: LC50:>2.01 mg/L (EPA Category IV).

Acute Eye Irritation: Minimal, all effects cleared in 24 hours (EPA Category IV).

Acute Dermal Irritation: Slight, no erythema or edema at 72 hours (EPA Category IV).

Skin Sensitization: Not a sensitizer (EPA Category IV).

Classified as a Category IV by the U.S. Environmental Protection Agency (EPA) per toxicity profile Review for all routes of exposure: no signal words, no precautionary statements or first aid statements required on product label.

EFFECTS OF CHRONIC EXPOSURE :

Irritancy: Frequent prolonged contact may result in dry skin, redness and dermatitis.

Carcinogenicity/Mutagenicity: No, not predictable.

SECTION 12 : ECOLOGICAL INFORMATION

Biodegradability: Readily Biodegradable (OECD 301E)

Aquatic toxicity: Not toxic to aquatic life (IC50 > 100 mg/L, report EPS 1 / RM / 24)

Method: Microtox® Acute Toxicity Test

Test organism: *Vibrio fischeri*

Results:

CI 50-5 min	560mg/l
IC 95 %-5 min	500-600 mg/L
CI 50-15 min	660 mg/L
IC 95 %-15 min	540-780 mg/L

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose according to existing federal, state/provincial and municipal regulations. This product is biodegradable.

SECTION 14 : TRANSPORT INFORMATION

D.O.T. Not regulated as dangerous goods.

Not regulated for **IATA**.

SECTION 15 : REGULATORY INFORMATION

U.S. EPA registration: 87742-1-92595

California Proposition 65: No chemicals in this material are subject to the reporting requirements.

NSF Registration No. 157263

SECTION 16 : OTHER INFORMATION

SDS Date of preparation/revision: 2018-08-15

Prepared by: LABORATOIRE M2 Inc.

Phone : 1-866-898-0697



Disclaimer

Information for this material safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the mandatory requirements of WHMIS. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from result from the use of or reliance on any information contained in this form. If user requires independent information on ingredients in this or any other material, we recommend contact with the Canadian Center for Occupational Health and Safety (CCOHS) in Hamilton, Ontario (1-800-263-8276) or CSST in Montreal (514-873-3990).



SAFETY DATA SHEET

according to WHS and ADG requirements

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BioSentry® BioPhene™ Disinfectant

Revision 1
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	BioSentry® BioPhene™ Disinfectant
Product code	D12670100, D12695607, D12709568

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use	[SU3] Industrial uses: Uses of substances as such or in preparations at industrial sites; [PC8] Biocidal products (e.g. Disinfectants, pest control);
Description	Disinfectant.

1.3. Details of the supplier of the safety data sheet

Company	Neogen Corporation
Address	620 Leshar Place Lansing MI 48912 USA
Web	www.neogen.com
Telephone	517-372-9200/800-234-5333
Email	SDS@neogen.com

1.4. Emergency telephone number

	24 hours: Medical: 1-800-498-5743 (U.S. and Canada) or 1-651-523-0318 (international) Spill/CHEMTREC: 1-800-424-9300 (U.S. and Canada) or 1-703-527-3887 (international)
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Further information

	Manufactured By: HACCO, Inc. 110 Hopkins Dr. Randolph, WI 53956-1316 U.S.A. HACCO, Inc. is a wholly-owned subsidiary of Neogen Corporation.
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture


2.1.2. Classification - GHS	Flam. Liq. 3: H226; Skin Corr. 1B: H314; Skin Sens. 1: H317; Acute Tox. 4: H332; STOT SE 3: H335; STOT SE 3: H336; Carc. 1A: H350; STOT RE 2: H373;
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2.2. Label elements

BioSentry® BioPhene™ Disinfectant

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2.2. Label elements

Hazard pictograms	
Signal Word	Danger
Hazard Statement	<p>Flam. Liq. 3: H226 - Flammable liquid and vapour. Skin Corr. 1B: H314 - Causes severe skin burns and eye damage. Skin Sens. 1: H317 - May cause an allergic skin reaction. Acute Tox. 4: H332 - Harmful if inhaled. STOT SE 3: H335 - May cause respiratory irritation. STOT SE 3: H336 - May cause drowsiness or dizziness. Carc. 1A: H350 - May cause cancer . STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure .</p>
Precautionary Statement: Prevention	<p>P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P264 - Wash thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection.</p>
Precautionary Statement: Response	<p>P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a POISON CENTER/doctor/ if you feel unwell. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P363 - Wash contaminated clothing before reuse.</p>
Precautionary Statement: Storage	P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
Precautionary Statement: Disposal	P501 - Dispose of contents/container to an approved hazardous/special waste disposal facility in accordance with local and national regulations

2.3. Other hazards

Other hazards	Contact with acids liberates toxic gas.
Further information	Read the entire label and follow all use directions, restrictions, and precautions.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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3.2. Mixtures

EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification
Sodium sulfite		7757-83-7	231-821-4		0 - 0.5%	EUH031;
Sodium hydroxide	011-002-00-6	1310-73-2	215-185-5		1 - 10%	Skin Corr. 1A: H314;
Isopropanol (Isopropyl alcohol)	603-117-00-0	67-63-0	200-661-7		10 - 20%	Flam. Liq. 2: H225; Eye Irrit. 2: H319; STOT SE 3: H336;
2-Benzyl-4-chlorophenol		120-32-1	204-385-8		1 - 10%	Skin Irrit. 2: H315; Eye Dam. 1: H318; Acute Tox. 4: H332; STOT SE 3: H335; STOT RE 2: H373;
2-Phenylphenol (ISO)	604-020-00-6	90-43-7	201-993-5		1 - 10%	Eye Irrit. 2: H319; STOT SE 3: H335; Skin Irrit. 2: H315; Aquatic Acute 1: H400;
Sulfonated phenyl ether (Phenyl ether (vapour))		101-84-8			1 - 10%	Eye Irrit. 2: H319;
Alkybenzenesulfonic acid, C(10-16)		68584-22-5	271-528-9		1 - 10%	Acute Tox. 4: H302; Acute Tox. 3: H311; Skin Corr. 1B: H314; Eye Dam. 1: H318; Acute Tox. 2: H330; Carc. 1A: H350; STOT RE 2: H373;
tetrasodium ethylene diamine tetraacetate	607-428-00-2	64-02-8	200-573-9		1 - 10%	Acute Tox. 4: H302; Eye Dam. 1: H318;
p-tert-Amylphenol		80-46-6	201-280-9		1 - 10%	Acute Tox. 4: H302; Acute Tox. 4: H302+H312; Acute Tox. 4: H312; Skin Corr. 1A: H314; Skin Sens. 1: H317; Eye Dam. 1: H318; STOT SE 3: H336;
Fragrance, Universal					0 - 0.5%	Flam. Liq. 4: H227; Asp. Tox. 1: H304; Skin Irrit. 2: H315; Skin Sens. 1: H317; Eye Irrit. 2: H319; Carc. 2: H351; STOT SE 2: H371;

Description

Included on the Candidate List of Substances of Very High Concern: [p-tert-Amylphenol (Amylphenols), CAS No. 80-46-6].

Concentrations listed are not product specifications.

Further information

Full text of Hazard Statements listed in this Section is provided in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air. If breathing is difficult give oxygen. If breathing stops, provide artificial respiration. Seek medical attention if irritation or symptoms persist.
Eye contact	Rinse immediately with plenty of water. Contact lenses should be removed. Seek medical attention.
Skin contact	Rinse immediately with plenty of water. Remove contaminated clothing. Seek medical attention.
Ingestion	DO NOT INDUCE VOMITING unless advised to do so by a doctor. Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory
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4.2. Most important symptoms and effects, both acute and delayed

	irritation.
Eye contact	Causes burns. Risk of serious damage to eyes.
Skin contact	Causes burns. Danger of very serious irreversible effects.
Ingestion	Causes burns. Ingestion may cause nausea and vomiting. Seek medical attention.

4.3. Indication of any immediate medical attention and special treatment needed

	Remove the affected person from the source of contamination immediately. Transfer to hospital if there are burns or symptoms of poisoning. IF exposed or concerned: Get medical advice/attention. If medical advice is needed, have product container or label at hand.
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Further information

	Refer to product label and/or package insert for additional information.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

	In case of fire, use carbon dioxide (CO ₂), Alcohol resistant foam, Dry chemical, Foam. Use extinguishing media appropriate to the surrounding fire conditions.
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5.2. Special hazards arising from the substance or mixture

	In case of fire and/or explosion do not breathe fumes. Vapour may travel considerable distance to source of ignition and flash back. Heat will increase pressure in sealed containers. Corrosive. Contains substance(s) which are hazardous to the environment. Do not allow runoff water to enter sewers or drains.
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5.3. Advice for firefighters

	Flammable liquid and vapour. In case of fire and/or explosion do not breathe fumes. Wear self contained breathing apparatus and protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

	Flammable liquid. Adopt best Manual Handling considerations when handling, carrying and dispensing. Avoid sparks, flames, heat and sources of ignition. Ensure adequate ventilation of the working area. Use as appropriate: Protective equipment. Avoid prolonged or repeated exposure.
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6.2. Environmental precautions

	Prevent further spillage if safe. Clean spillage area thoroughly with plenty of water. Do not flush into surface water. Do not let product contaminate subsoil.
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6.3. Methods and material for containment and cleaning up

	Flammable liquid. Absorb with inert, absorbent material. Collect spillage. Transfer to suitable, labelled containers for disposal. Dispose of this material and its container to hazardous or special waste collection point. Do not contaminate water by cleaning of equipment or disposal of wastes. Clean with detergents. Avoid solvents.
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6.4. Reference to other sections

	See section 2, 8 & 13 for further information.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

	Adopt best Manual Handling considerations when handling, carrying and dispensing. Avoid contact with eyes. Do not eat, drink or smoke in areas where this product is used or stored. Ensure adequate ventilation of the working area. Do not contaminate water by cleaning of equipment or
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7.1. Precautions for safe handling

disposal of wastes. Use as appropriate: Protective clothing.
Read the entire label and follow all use directions, restrictions, and precautions.

7.2. Conditions for safe storage, including any incompatibilities

Flammable liquid and vapour. Contact with combustible material may cause fire. Store in correctly labelled containers. Keep container tightly closed. Do not contaminate water, food, or feed by storage or disposal. Follow label instructions.

7.3. Specific end use(s)

See Section 1.2 for further information.

Further information

Refer to product label and/or package insert for additional information.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Exposure Limit Values

Isopropanol (Isopropyl alcohol)	TWA ppm: 400 STEL ppm: 500 Advisory Carc Cat: -	TWA mg/m3: 983 STEL mg/m3: 1230
Sodium hydroxide	TWA ppm: - STEL ppm: - Advisory Carc Cat: -	TWA mg/m3: 2 Peak limitation STEL mg/m3: -
Sulfonated phenyl ether (Phenyl ether (vapour))	TWA ppm: 1 STEL ppm: 2 Advisory Carc Cat: -	TWA mg/m3: 7 STEL mg/m3: 14

8.2. Exposure controls



8.2.1. Appropriate engineering controls

Ensure adequate ventilation of the working area.

8.2.2. Individual protection measures

Use as appropriate: Protective equipment.

Eye / face protection

Use as appropriate: Suitable eye protection.

Skin protection - Handprotection

Use as appropriate: Chemical-resistant gloves made of any waterproof material.

Skin protection - Other

Use as appropriate: Protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Occupational exposure controls

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from food, drink and animal feedingstuffs. Provide chemical shower. Provide eye wash station.

Further information

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Further information

Refer to product label for additional PPE requirements and recommendations. Follow label instructions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Amber
Odour	Alcoholic
Odour threshold	No data available
pH	No data available
Melting point	No data available
Freezing Point	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Viscosity	No data available
Evaporation rate	No data available
Oxidising properties	No data available
Initial boiling point	> 100 °C
Flash point	≈ 38 °C
Flammability (solid, gas)	Not applicable.
Explosive properties	Not applicable.
Solubility	Soluble in water

9.2. Other information

VOC (Volatile organic compounds)	≈ 13 %
Gas group	Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Contact with combustible material may cause fire. Keep away from oxidising agents, Combustible materials. Contact with acids liberates toxic gas.

10.6. Hazardous decomposition products

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10.6. Hazardous decomposition products

Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Harmful by inhalation. May be harmful if swallowed. May be harmful in contact with skin.
Skin corrosion/irritation	Causes burns. Danger of very serious irreversible effects. Sensitization after skin contact possible.
Serious eye damage/irritation	Causes burns. Causes severe inflammation and may damage the cornea.
Respiratory or skin sensitisation	May cause allergic reactions in susceptible people.
Germ cell mutagenicity	No mutagenic effects reported.
Carcinogenicity	Carcinogen category 1. Listed by the International Agency for Research on Cancer (IARC) as a group 3 substance: evidence does not support the substance as a human carcinogen, [Isopropanol, CAS No. 67-63-0], [o-Phenylphenol, CAS No. 90-43-7]. Not listed in the National Toxicology Program (NTP) 14th Report on Carcinogens. Not listed in the American Conference of Governmental Industrial Hygienists (ACGIH) Guide to Occupational Exposure Values. Not listed in the OSHA standard 1910.1003 Carcinogens.
Reproductive toxicity	No teratogenic effects reported.
STOT-single exposure	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT-repeated exposure	Component(s) may cause damage to human organs based on animal data.
Aspiration hazard	No Significant Hazard.
Repeated or prolonged exposure	Avoid prolonged or repeated exposure. Exposure above the recommended occupational exposure limit (OEL) may cause adverse health effects. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible.

11.1.2. Mixtures

See Section(s) 3 for further information.

11.1.3. Hazard Information

See Section(s) 2 and 3 for further information.

11.1.4. Toxicological Information

No data available

11.1.5. Hazard Class

See Section(s) 2 and 14 for further information.

11.1.6. Classification Criteria

Based on the Globally Harmonised System (GHS) considerations for the classification of mixtures. See Section 15 for regulatory citations.

11.1.7. Information on likely routes of exposure

Eye contact. Skin contact. Inhalation. Ingestion.

11.1.8. Symptoms related to the physical, chemical and toxicological characteristics

See Section(s) 4.2 for further information.

11.1.9. Delayed and immediate effects as well as chronic effects from short and long-term exposure

See Section(s) 4.2 for further information.

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11.1.10. Interactive effects

No data available.

11.1.11. Absence of specific data

<1% of this mixture consists of ingredients of unknown acute toxicity.

11.1.12. Mixture versus substance information

See Section(s) 3 for further information.

11.1.13. Other information

Caution - substance not yet fully tested.

SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

No data is available on this product.

12.3. Bioaccumulative potential

No data is available on this product.

Partition coefficient

BioSentry® BioPhene™ Disinfectant	No data available	2-Phenylphenol (ISO) 3 log P
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12.4. Mobility in soil

No data is available on this product.

12.5. Results of PBT and vPvB assessment

No data is available on this product.

12.6. Other adverse effects

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other water.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of as special waste in compliance with local and national regulations.

Disposal methods

Do not contaminate water by cleaning of equipment or disposal of wastes. Do not flush into surface water. Dispose of in compliance with all local and national regulations.

Disposal of packaging

Nonrefillable container. Do not reuse or refill this container.
If empty: Do not reuse this container. Place in trash or offer for recycling, if available.
If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Further information

Refer to product label and/or package insert for additional information.

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SECTION 14: Transport information

Hazard pictograms

	 
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14.1. UN number

	UN2924
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14.2. UN proper shipping name

	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Isopropanol, Phenols)
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14.3. Transport hazard class(es)

ADG	3
Subsidiary risk	8
IMDG / GGVSee	3
Subsidiary risk	8
IATA / ICAO / DGR	3
Subsidiary risk	8

14.4. Packing group

Packing group	III
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14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

ADG

Hazard ID	38
Tunnel Category	(D/E)

IMDG / GGVSee

EmS Code	F-E S-C
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IATA / ICAO / DGR

Packing Instruction (Cargo)	365
Maximum quantity	60 L
Packing Instruction (Passenger)	354
Maximum quantity	5 L

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations	This document has been prepared in accordance with the requirements set out in the Work Health and Safety Regulation 2017 under the Work Health and Safety Act 2011.
Chemical Inventories/Right-to-Know Lists:	--International--. Basel Convention (Hazardous Waste): H3. Chemical Weapons Convention (OPCW): This material contains no reportable components. Kyoto Protocol Greenhouse Gases: This material contains no reportable components. Mercosur Agreement: Not applicable.

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Montreal Protocol: This material contains no reportable components.
 The Rotterdam Convention: This material contains no reportable components.
 The Stockholm Convention: This material contains no reportable components.

--Asia and the ASEAN Nations--.

Catalog of Hazardous Chemicals (China): [111, Isopropanol, CAS No. 67-63-0], [69, o-Phenylphenol, CAS No. 90-43-7].
 Regulation of Minister of Trade of the Republic of Indonesia, Number 75, Year 2014, regarding The Second Amendment of Minister of Trade, Number 44, Year 2009, Regarding Provision, Distribution, and Control of Hazardous Substances: This material contains no reportable components.
 Chemical Substances Control Law (Japan): Priority Assessment, (human health), [102, Isopropanol, CAS No. 67-63-0], Class I environmental release, Air Pollution Control Law., Water Pollution Control Law., [o-Phenylphenol, CAS No. 90-43-7], Class I environmental release, [Phenyl ether, CAS No. 101-84-8], [Sodium hydroxide (solution), CAS No. 1310-73-2]. Type II monitoring, No. 1088 [o-Phenylphenol, CAS No. 90-43-7]. Type III monitoring, No. 98 [Phenyl ether, CAS No. 101-84-8].
 Industrial Safety and Health Act, Dangerous Substances (Japan): Labeling/Notification required, Second-class organic solvents, etc., [Isopropanol, CAS No. 67-63-0], Labeling/Notification required, [Phenyl ether, CAS No. 101-84-8], [Sodium hydroxide (solution), CAS No. 1310-73-2]. Administrative controls, reg. no. 37 [Isopropanol, CAS No. 67-63-0].
 Poisonous and Deleterious Substances Act (Japan): This material contains no reportable components.
 Chemical Substances Subject to Permission (Korea): Priority Control substance, [p-tert-Amylphenol, CAS No. 80-46-6].
 Restricted or Prohibited Substances (Korea): This material contains no reportable components.
 Use and Standards of Exposure of Chemicals Hazardous to Health (USECHH), Regulation 2000 (Malaysia): Schedule I exposure standard, CLASS regulation, [Isopropanol, CAS No. 67-63-0], [Sodium hydroxide (solution), CAS No. 1310-73-2], Schedule I exposure standard, [Phenyl ether, CAS No. 101-84-8].
 Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients listed or exempt.
 Taiwan Toxic and Concerned Chemical Substances Control Act (TCCSCA): [1/10, o-Phenylphenol, CAS No. 90-43-7].
 Hazardous Substances Act (Thailand): This material contains no reportable components.
 Law on Chemicals (Vietnam): Annex I, Appendix VII, [Isopropanol, CAS No. 67-63-0], [Sodium hydroxide (solution), CAS No. 1310-73-2].

--Australia and New Zealand--.

Australian Dangerous Goods Code: Class 3.
 Australian Inventory of Chemical Substances (AICS): All ingredients listed or exempt.
 New Zealand Inventory of Chemicals (NZIoC): All ingredients listed or exempt.

--European Union (EU) and the United Kingdom (UK)--.

Annex XVII for REACH: This material contains no reportable components.
 Article 95 of the Biocidal Products Regulation (BPR): [PT1, Isopropanol, CAS No. 67-63-0], [PT2, 2-Benzyl-4-chlorophenol, CAS No. 120-32-1], [PT1, o-Phenylphenol, CAS No. 90-43-7].
 Authorisation List (Annex XIV of REACH): This material contains no reportable components.

--North America--.

Domestic/Non-Domestic Substances Lists (DSL/NDSL): All ingredients listed or exempt.
 Toxic Substances Control Act (TSCA): All ingredients listed or exempt.
 Massachusetts Right-to-Know Hazardous Substance List: Isopropanol, o-Phenylphenol,

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Amylphenols, Sodium hydroxide.
New Jersey Worker and Community Right to Know Act: Isopropyl alcohol, o-Phenylphenol, Phenyl ether, Amylphenols, Sodium hydroxide.
Pennsylvania Right to Know Law: 2-Propanol, o-Phenylphenol, Benzene, 1,1'-oxybis, Phenol, 4-chloro, Sodium hydroxide.
Rhode Island Right-to-Know General Law: Isopropyl alcohol, Phenyl ether (vapor), Amylphenols (skin), Sodium hydroxide.

****California residents please note**.**
WARNING: This product can expose you to chemicals, including o-Phenylphenol, CAS No. 90-43-7, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Other information

Revision	This document differs from the previous version in the following areas:.
	<ul style="list-style-type: none"> 1 - Description. 1 - Product Use. 1 - Manufactured By:. 2 - Other hazards. 2 - 2.1. Classification of the substance or mixture. 2 - 2.1.2. Classification - GHS. 2 - Hazard pictograms. 2 - Precautionary Statement: Prevention. 2 - Precautionary Statement: Response. 2 - Precautionary Statement: Storage. 2 - Precautionary Statement: Disposal. 2 - Further information. 3 - Description. 4 - Skin contact. 4 - Eye contact. 4 - Inhalation. 4 - Eye contact. 4 - Skin contact. 4 - Ingestion. 4 - Further information. 5 - 5.2. Special hazards arising from the substance or mixture. 7 - Further information. 8 - Further information. 9 - 9.1. Information on basic physical and chemical properties (PH). 9 - 9.1. Information on basic physical and chemical properties (Flash point). 9 - 9.1. Information on basic physical and chemical properties (Flammability (solid, gas)). 9 - 9.1. Information on basic physical and chemical properties (Explosive properties). 9 - 9.1. Information on basic physical and chemical properties (Fat Solubility). 9 - 9.2. Other information (VOC (Volatile organic compounds)). 9 - 9.2. Other information (Conductivity). 9 - 9.2. Other information (Gas group). 9 - 9.2. Other information (Surface tension). 9 - 9.2. Other information (Product Subcategory). 10 - 10.5. Incompatible materials. 11 - Acute toxicity. 11 - Skin corrosion/irritation.

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Other information

	<p>11 - Carcinogenicity. 11 - Serious eye damage/irritation. 12 - 12.1. Toxicity. 12 - 12.6. Other adverse effects. 13 - Further information. 14 - ADG. 14 - IMDG / GGVSee. 14 - IATA / ICAO / DGR. 15 - Hazard Statement. 15 - Chemical Inventories/Right-to-Know Lists:. 16 - Maximum content of VOC.</p>
<p>Acronyms</p>	<p>ACGIH: American Conference of Governmental Industrial Hygienists. ADR/RID: European Agreements Concerning the International Carriage of Dangerous Goods by Rail (RID) and by Road (ADR). CAS No.: Chemical Abstracts Service. CLASS: Classification, Labelling, and Safety Data Sheet of Hazardous Chemicals Regulation 2013 (Malaysia). GHS: Globally Harmonized System. HCS 2012: U.S. Hazard Communication Standard (2012 revision). IATA: International Air Transport Association. ICAO: International Civil Aviation Organisation. IMDG: International Maritime Dangerous Goods. LC: Lethal concentration. LD: Lethal dose. OEL: Occupational exposure limit. OSHA: U.S. Occupational Safety and Health Administration. PEL: Permissible Exposure Limit. REACH: Registration, Evaluation, Authorisation, and Restriction of Chemicals. SVHC: Substance of very high concern. UN: United Nations. US DOT: United States Department of Transportation. VOC: Volatile Organic Compound. WEL: Workplace Exposure Limit.</p>
<p>Text of Hazard Statements in Section 3</p>	<p>AUH031 - Contact with acids liberates toxic gas. Skin Corr. 1A: H314 - Causes severe skin burns and eye damage. Skin Corr. 1B: H314 - Causes severe skin burns and eye damage. Skin Irrit. 2: H315 - Causes skin irritation. Eye Irrit. 2: H319 - Causes serious eye irritation. Flam. Liq. 2: H225 - Highly flammable liquid and vapour. STOT SE 3: H336 - May cause drowsiness or dizziness. Eye Dam. 1: H318 - Causes serious eye damage. Acute Tox. 4: H332 - Harmful if inhaled. STOT SE 3: H335 - May cause respiratory irritation. STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure . Aquatic Acute 1: H400 - Very toxic to aquatic life. Acute Tox. 4: H302 - Harmful if swallowed. Acute Tox. 3: H311 - Toxic in contact with skin. Acute Tox. 2: H330 - Fatal if inhaled. Carc. 1A: H350 - May cause cancer . Acute Tox. 4: H302+H312 - Harmful if swallowed or in contact with skin Skin Sens. 1: H317 - May cause an allergic skin reaction. Flam. Liq. 4: H227 - Combustible liquid.</p>

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Other information

	Asp. Tox. 1: H304 - May be fatal if swallowed and enters airways. Carc. 2: H351 - Suspected of causing cancer . STOT SE 2: H371 - May cause damage to organs .
Maximum content of VOC	13 %.

Further information

	<p>DISCLAIMER: The information and recommendations set forth herein ("Information") are presented in good faith and believed to be correct as of the date issued. No representation is made regarding the completeness or accuracy of the Information. Further, because of the many factors that affect the use of this product, the Information is supplied upon the condition that the person(s) receiving it will make their own determination regarding its suitability for their own unique purpose(s), prior to use.</p> <p>Except as expressly stated herein, NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF PERFORMANCE, USAGE OF TRADE, OR RESULTS TO BE OBTAINED BY USE OF THIS PRODUCT are made with respect to this product or use of this product. The product covered is furnished "as is" and only subject to the warranties herein provided, no liability is assumed resulting from the use of this product.</p>
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SAFETY DATA SHEET

Creation Date 23-Jun-2008

Revision Date 26-May-2017

Revision Number 3

1. Identification

Product Name BISMUTH

Cat No. : AC318090000; AC318091000; AC318095000

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids

Category 2

Label Elements

Signal Word
Warning

Hazard Statements
Flammable solid



Precautionary Statements

Prevention
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting/equipment
 Wear protective gloves/protective clothing/eye protection/face protection

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Hazards not otherwise classified (HNOC)

None identified

3. Composition / Information on Ingredients

Component	CAS-No	Weight %
Bismuth powder	7440-69-9	>95

4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.
Inhalation	Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. Obtain medical attention.
Ingestion	Clean mouth with water. Get medical attention.
Most important symptoms/effects	No information available.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray. Carbon dioxide (CO ₂). Dry chemical. Chemical foam.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	
Explosion Limits	
Upper	.00%
Lower	4.00%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Combustible material.

Hazardous Combustion Products

None known

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	2	0	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions	See Section 12 for additional ecological information.

Methods for Containment and Clean Up Avoid dust formation. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment.

7. Handling and storage

Handling Avoid contact with skin and eyes. Avoid contact with clothing. Avoid breathing vapors or mists. Do not ingest. Use explosion-proof equipment. Use only non-sparking tools. Minimize dust generation and accumulation.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection No protective equipment is needed under normal use conditions.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Black
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	271 °C / 519.8 °F
Boiling Point/Range	1500 °C / 2732 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	.00%
Lower	4.00%
Vapor Pressure	1 hPa @ 840 °C
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	
Decomposition Temperature	No information available

Viscosity Not applicable
 Molecular Formula Bi
 Molecular Weight 208.98

10. Stability and reactivity

Reactive Hazard None known, based on information available
Stability Stable under normal conditions.
Conditions to Avoid Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
Incompatible Materials Acids, Strong oxidizing agents, Halogens
Hazardous Decomposition Products None under normal use conditions
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bismuth powder	LD50 = 5 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available
Sensitization No information available
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Bismuth powder	7440-69-9	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Teratogenicity No information available.
STOT - single exposure None known
STOT - repeated exposure None known
Aspiration hazard No information available
Symptoms / effects, both acute and delayed No information available
Endocrine Disruptor Information No information available
Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains. .

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3089
 Proper Shipping Name Metal powder, flammable, n.o.s
 Hazard Class 4.1
 Packing Group II

TDG

UN-No UN3089
 Proper Shipping Name METAL POWDER, FLAMMABLE, N.O.S.
 Hazard Class 4.1
 Packing Group II

IATA

UN-No UN3089
 Proper Shipping Name METAL POWDER, FLAMMABLE, N.O.S.
 Hazard Class 4.1
 Packing Group II

IMDG/IMO

UN-No UN3089
 Proper Shipping Name METAL POWDER, FLAMMABLE, N.O.S.
 Hazard Class 4.1
 Packing Group II

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Bismuth powder	X	X	-	231-177-4	-		X	-	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants

that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available



Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 23-Jun-2008

Revision Date 26-May-2017

Print Date 26-May-2017

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other

materials or in any process, unless specified in the text

End of SDS

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BIURET TEST REAGENT (for protein test)
Synonyms Biuret Reagent Solution / Biuret Reagent / Biuret Solution

Section 2 Hazards Identification

Signal word: DANGER
Pictograms: GHS05
Target organs: Respiratory tract, gastrointestinal tract, eyes, skin.



GHS Classification:
Skin. Corr. (Category 1A)

GHS Label information: Hazard statement:
H314: Causes severe skin burns and eye damage.

Precautionary statement:

P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor/physician.
P363: Wash contaminated clothing before reuse.
P405: Store locked up.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with all local, state and federal regulations.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	90.38%	231-791-2
Sodium hydroxide	1310-73-2	6.42%	215-185-5
Potassium sodium tartrate	6381-59-5	1.65%	206-156-8
Cupric sulfate, pentahydrate	7758-99-8	1.18%	231-847-6
Potassium iodide	7681-11-0	0.35%	231-659-4
Ethylenediaminetetraacetic acid	6381-92-6	0.02%	None assigned.

Section 4 First Aid Measures

INGESTION: MAY BE FATAL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SEVERE DAMAGE. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: CAUSES SEVERE BURNS. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Dry chemical, water spray, alcohol foam. Can react with carbon dioxide to form sodium carbonate.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume. Contact with metals can generate hydrogen gas.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Sodium hydroxide	STEL: C 2 mg/m ³	TWA: 2 mg/m ³	STEL: C 2 mg/m ³

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.	Evaporation rate (Water = 1): < 1	Partition coefficient: (n-octanol / water): Not applicable
Odor: No odor.	Flammability (solid/gas): Not applicable.	Auto-ignition temperature: Not applicable
Odor threshold: Not applicable.	Explosion limits: Lower / Upper: Not applicable	Decomposition temperature: Data not available.
pH: Data not available.	Vapor pressure (mm Hg): 14 [water]	Viscosity: Data not available.
Melting / Freezing point: ~ 0°C (~ 32°F) [water]	Vapor density (Air = 1): 0.7 [water]	Molecular formula: Mixture
Boiling point: ~ 100°C (212°F) [water]	Relative density (Specific gravity): 1.0 [water]	Molecular weight: Mixture
Flash point: Not flammable.	Solubility(ies): Complete in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Can react with carbon dioxide to form sodium carbonate.

Incompatible materials: Metals, acids, organic compounds, organic nitro compounds.

Hazardous decomposition products: Sodium oxide. Reacts with metals to form flammable and explosive hydrogen gas.

Section 11 Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Skin - rabbit - Causes severe burns. - 24 h [Sodium hydroxide]

Serious eye damage/irritation: Eyes - rabbit - Severe eye irritation - 24 h [Sodium hydroxide]

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns. Causes severe eye burns.

Signs and symptoms of exposure: Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Additional information: RTECS #: WB4900000 [Sodium hydroxide]

Section 12 Ecological Information

Toxicity to fish: LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h [Sodium hydroxide]

Toxicity to daphnia and other aquatic invertebrates: Immobilization EC50 - Daphnia - 40.38 mg/l - 48 h [Sodium hydroxide]

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information


UN/NA number: UN1824 **Shipping name:** Sodium hydroxide solution

Hazard class: 8 **Packing group:** II **Reportable Quantity:** 1,000 lbs (454 kg) **Marine pollutant:** No

Exceptions: Limited quantity equal to or less than 1 L **2012 ERG Guide #** 154

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Sodium hydroxide	Listed	1,000 lbs (454 kg)	D002	Listed	Not listed	 E

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: August 30, 2013

Supersedes: August 17, 2012

SAFETY DATA SHEET

9/2/2015

SECTION I - IDENTIFICATION

Material Name

BLACK INDIA INK

Company Information

Speedball Art Products Co.
P.O. Box 5157
2301 Speedball Road
Statesville, NC 28677
Phone: 704-978-4166
Fax: 1-704-838-1472
Email: budmartin@speedballart.com

For transportation emergencies only call: 1-800-898-7224

For health emergencies call the Poison Control Center: 1-800-222-1222

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

There are no GHS label elements.

PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, EYE, SKIN

EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE: NONE EXPECTED

EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE: NONE EXPECTED

CARCINOGEN LISTING: NTP: **NO** IARC: **NO** OSHA: **NO**

SEE SECTION III FOR COMPONENTS AFFECTED

MEDICAL CONDITIONS USUALLY AGGRAVATED BY OVER EXPOSURE TO THIS PRODUCT: NONE

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

<u>Hazardous Ingredients</u>	<u>CAS/EC #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: NONE REQUIRED. NO ACUTE HEALTH EFFECTS EXPECTED.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME): NOT EXPLOSIVE

AUTOIGNITION TEMPERATURE: N/A

EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: NONE REQUIRED
ENGINEERING CONTROLS: NONE REQUIRED

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A	MELTING POINT: N/A
VAPOR PRESSURE: N/A	
SPECIFIC VAPOR DENSITY (AIR=1): N/A	SPECIFIC GRAVITY: N/A
SOLUBILITY IN WATER: N/A	REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: NONE
STABILITY: STABLE CONDITIONS TO AVOID: NONE
INCOMPATIBILITY (MATERIALS TO AVOID): NONE
HAZARDOUS DECOMPOSITION PRODUCTS: NONE

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: NONE EXPECTED
The summated LD50 is >50000 mg/kg.
The summated LC50 is 99999 mg/cubic meter.
This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER.

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

[U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.]

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200
EPA SARA TITLE III CHEMICAL LISTINGS
NONE

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:
2-DIMETHYLAMINOETHANOL

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:
2-DIMETHYLAMINOETHANOL
AQUEOUS BORATED SHELLAC

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:
NONE

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

NONE

SECTION XVI - OTHER INFORMATION

LAST REVISION DATE: 09/02/2015

Prepared by Duke OEM Toxicology

Product Name: 20016 Blair Gloss Clear
Product Code: 06-970-12

Print Date: 8/21/15
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SAFETY DATA SHEET

1. Product and Company Identification

Product Name: Blair Gloss Acrylic
Product Code: 20016
Product Type: Aerosol
Product Use: Art Material

Manufacturer: Distributed by: Creative Art Materials Ltd. **Revision Date:** 6./24/2015
Address: 236 Raceway Drive **Emergency Phone:** 1-800-255-3924
Mooreville, NC 28117 **Phone:** (704)664-1427

NOTE: The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We provide this information as guidance for providing personal protection to your employees. The user has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. The user must meet all applicable safety and health standards. We provide this information as guidance for providing personal protection to your employees.

2. Hazard Identification

Classification of substance or mixture:

Flammable Aerosols	Category 1
Gases Under Pressure	Liquefied Gas
Carcinogenicity	Category 1
Skin Irritation	Category 2,
Skin Sensitization	Category 1
Toxic to Reproduction	Category 2
Eye damage/irritation	Category 2A
Germ Cell Mutagenicity	Category 1
Specific target organ toxicity, single exposure	Category 3 (Central nervous system)
Specific target organ toxicity repeated exposure	Category 2 (inhalation)
Aspiration hazard	Category 1
Acute Toxicity Oral	Category 4

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Pictograms



Signal Word: Danger

Hazard Statement(s)

H222 Extremely flammable aerosol
H280 Contains gas under pressure; may explode if heated.

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H350 May cause cancer
H315 Causes Skin irritation
H317 May cause an allergic skin reaction
H361 Suspected of damaging fertility or the unborn child
H336 May cause drowsiness or dizziness
H373 May cause damage to organs through prolonged or repeated exposure
H319 Causes serious eye irritation
H340 May cause genetic defects
H304 May be fatal if swallowed and enters airways
H302 Harmful if swallowed

Precautionary Statements:

Prevention

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood
P281 Use personal protective equipment as required.
P210 Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source
P251 Pressurized container: Do not pierce or burn, even after use.
P260 Do not breathe dust/fume/ gas/mist.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P304+P340 If Inhaled: Remove victim to fresh air and keep comfortable for breathing.
P312 Call a poison center/doctor/if you feel unwell.
P301+P310 If swallowed: Immediately call a poison center or doctor/physician.
P331 Do not induce vomiting
P302+P352 If on skin: wash with plenty of water and soap.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing and wash it before reuse.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P308+P313 If exposed or concerned: Get medical attention.

Storage and Disposal

P405 Store locked up
P403 Store in a well ventilated place.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P501 Dispose of contents/container in accordance with local/regional regulations.

3. Composition information on ingredients

Ingredients	CAS #	Percent
Liquefied Petroleum Gas	68476-86-8	20-30 %

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Aromatic Hydrocarbon	Mixture	1-5%
Toluene	108-88-3	10-20%
Acetone	67-64-1	30-50%
Ethylene Glycol	111-76-2	1-5%

4. First Aid Measures

Eye Contact:

Flush with warm water for 15 minutes. Seek medical attention.

Skin Contact:

Wash with soap and water. Remove any contaminated clothing and launder before reusing. If irritation persists, seek medical attention.

Inhalation:

Remove exposed individual to fresh air, protecting yourself. Restore breathing if necessary. Contact a physician.

Ingestion:

Do not induce vomiting. Get medical attention immediately. DO NOT GIVE AN UNCONCIOUS OR CONVULSING PERSON ANYTHING BY MOUTH!

5. Fire Fighting Measures

Flash Point: Flash point of propellant <0 degrees F.

Flammable limits in air, % by volume:

Upper: 9.5 (VOL.) Gas in air (propellant portion)
Lower: 1.8 % (VOL.) Gas in air (propellant portion)

Extinguishing Media:

Dry chemical, carbon dioxide, halon, or foam is recommended. Water spray may be used to cool containers or structures. Halon may decompose into toxic materials and carbon dioxide will displace oxygen, take proper precautions when using these materials.

Unusual Fire & Explosion Hazards:

This material may be ignited by extreme heat, sparks, flames or other ignition sources (static electricity). Vapors are heavier than air and will collect in low areas (sewers) or travel considerable distances. If containers are not cooled in a fire, they may rupture and ignite.

Special Fire Fighting Procedures:

At elevated temperatures (over 130F) aerosol container may burst, vent or rupture; use equipment or shielding to protect personnel. Cooling exposed containers with streams of water may be helpful. Emergency responders should wear self-contained breathing apparatus. Wear other protective gear as conditions warrant. Keep unauthorized people out and try to contain spills or leaks if it can be done safely. Material will float on water, avoid spreading the fire.

6. Accidental Release Measures

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Spill or Leak Instructions

Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Assess the spill situation, as the spill may not evolve large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until spilled product is removed.

7. Handling and Storage

Handling:

Store below 120°F in cool, dry area, out of direct sunlight and away from strong oxidizers. Do not puncture or burst. Use in accordance with good work place practices. Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

Empty containers may contain residues from the product. Treat empty containers with the same precautions as the material last contained. Do not cut, weld or apply heat to empty containers Do not incinerate

Storage:

Store in a cool, dry area, away form heat or direct sunlight. Keep containers closed when not in use. Do not store with incompatible materials

8. Exposure Controls / Personal Protection

Protective Equipment:

Use synthetic gloves if necessary to prevent excessive skin contact. Do not wear contacts and always use ANSI approved safety glasses or splash shield.

Engineering Controls:

General or dilution ventilation is frequently sufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Use a NIOSH approved respirator if ventilation is not adequate to maintain exposures below TLV levels.

Respiratory Protection:

Use adequate ventilation to maintain exposure limits. If the exposure limits of the products or any of its components is exceeded, an approved organic vapor mask should be used (consult your safety equipment supplier). Above 1000 ppm, an approved self-contained breathing apparatus or airline respirator with full face-piece is required

Other Suggested Equipment:

Eye wash station and emergency showers should be available. Spill containment equipment should be available.

Discretion Advised:

We. take no responsibility for determining what measures are required for personal protection in any specific application. The general information should be used with discretion.

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Exposure guidelines:

Ingredients	CAS #	Percent	Exposure Limits
Liquefied Petroleum Gas	68476-86-8	20-30 %	OSHA (PEL) 1000 ppm ACGIH TLV 1000 ppm
Toluene	108-88-3	10-20	OSHA (TWA) 200 ppm ACGIH (TWA) 20 ppm
Aromatic Hydrocarbon	Mixture	1-5%	OSHA (PEL) TWA 500 ppm ACGIH (TLV) 100 ppm
Acetone	67-64-1	35-45 %	OSHA (PEL) 1000 ppm ACGIH (TWA) 500 ppm
Ethylene Glycol	111-76-2	1-5%	OSHA (PEL) 50 ppm (skin) ACGIH (TLV) 20 ppm

9. Physical and Chemical Properties

Appearance: Clear as dispensed from aerosol can. **Odor:** Sweet, pungent
Evaporation Rate: Ether = 1 Slower
PH: NA **Melting/Freezing point:** NE
Initial Boiling point and boiling range: NE **Flash Point:** Flash point of propellant <0°F
Flammability: NA **Vapor pressure:** >30 psi
Vapor density >1 (Air=1)
Relative density NE **Solubility:** negligible
Partition coefficient: NE **Auto-ignition temperature:** NE
Decomposition temperature: NE **Viscosity:** NA
Flammable limits in air, % by volume: (propellant portion)
Upper: 9.5%(vol) Gas in Air
Lower: 1.8% (vol) Gas in Air

10. Stability and Reactivity

Stability: Stable **Conditions to Avoid:** Heat, spark, and open flame
Incompatibility: Strong-Oxidizing Agents
Hazardous Decomposition: Combustion will produce Carbon Monoxide, Carbon Dioxide and nitrogen-oxygen compounds.
Hazardous Polymerization: Will not occur

11. Toxicological Information

Component Toxicological Information:

Acute oral toxicity
EB LD50 (rat) 1,300 mg/kg

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Acetone	LD 50 (rat) 5,800 mg/kg
toluene	LD 50 Rat 2.6 7.5 g/kg
Acute inhalation toxicity	
EB	LC50 (rat), 3 h > 4.9 mg/l
Acetone	LC50 (rat) 76.0 mg/l
Toluene	LC 50 Rat: 8,000 ppm 49 g/m3 4h
Acute dermal toxicity	
EB	LD 50 (rat) . 2,000 mg/kg
Acetone	LD50 > 7,426 mg/kg
Toluene	LD 50 Rabbit 14 g/kg

Chronic Toxicity

This product contains an ingredient listed by IARC, NTP or OSHA as chemical carcinogen (Hexalent Chromium)

Information on Toxicological Effects of Components

Toluene

Carcinogenicity: Exposure of rats and mice to toluene at concentrations ranging from 120-1200 ppm for two years did not demonstrate evidence of carcinogenicity. Toluene has not been listed as a carcinogen by IARC.

Target Organs: Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Reproductive Toxicity: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. Decreased fetal body weight and increased skeletal variations in both inhalation and oral studies, but only at doses that were maternally toxic. No fetal toxicity was seen at doses that were not maternally toxic. Decreased sperm counts have been observed in male rats in the absence of a reduction in fertility. Toluene has been reported to cause mental or growth retardation in the children of solvent abusers who directly inhale toluene during pregnancy.

12. Ecological Information

No Data available..

13. Disposal Considerations

Do not puncture or burn containers. Give empty, leaking, or full containers to disposal service equipped to handle and dispose of aerosol (pressurized) containers. Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

14. Transport Information

Aerosols (limited quantity),
Class 2.1, ERG 126

AIR (IATA)
Aerosols (limited quantity),

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Class 2.1, ERG 126, UN No. 1950
Vessel
Aerosol (Limited Quantity), Class 2.1, UN No 1950

15. Regulatory Information

Environmental Regulations

SARA 302/304:

SARA 311/312:

Immediate (x) Delayed () Fire (x) Reactive () Sudden Release of Pressure (x)

Section 313

This product contains:

Hexavalent chromium	<1%
Toluene	1-4%

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

BENZENE

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

BENZENE

TOLUENE

All the chemicals used in this product are TSCA listed.
Check with your local regulators to be sure all local regulations are met.

16. Other Information

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Level 3 Aerosol

HMIS: Health: 2 Flammability: 4 Reactivity: 0

RATING: 4-EXTREME 3-HIGH 2-MODERATE 1-SLIGHT 0-INSIGNIFICANT

Note:

The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We make no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Possession of an SDS does not indicate that the possessor of the SDS was a purchaser or user of the subject product.

SAFETY DATA SHEET

10516

Section 1. Identification

Product name : Blair Very Low Odor

Product code : 10516

Other means of identification : Not available.

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Manufacturer : Dist. by:
Creative Chemical Solutions Ltd.
Cleveland, OH 44128

Emergency telephone number of the company : (216) 566-2917

Product Information Telephone Number : (866) 833-7797

Regulatory Information Telephone Number : (216) 566-2902

Transportation Emergency Telephone Number : (800) 424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 11.1%

GHS label elements

Hazard pictograms :



Signal word :

Hazard statements :

: Danger
: Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Causes skin irritation.
May cause cancer.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness and dizziness.

Section 2. Hazards identification

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

- General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains a chemical known to the State of California to cause cancer. Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

CAS number/other identifiers

Ingredient name	% by weight	CAS number
Ethanol	67.8	64-17-5
Propane	11.1	74-98-6
Ethyl Acetate	8.8	141-78-6
Butane	5.2	106-97-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.
- Specific hazards arising from the chemical** : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Ethanol	ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes. NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1900 mg/m ³ 10 hours. OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m ³ 8 hours.
Propane	NIOSH REL (United States, 10/2013). TWA: 1000 ppm 10 hours. TWA: 1800 mg/m ³ 10 hours. OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m ³ 8 hours.
Ethyl Acetate	ACGIH TLV (United States, 4/2014).

Section 8. Exposure controls/personal protection

Butane

TWA: 400 ppm 8 hours.
 TWA: 1440 mg/m³ 8 hours.
NIOSH REL (United States, 10/2013).
 TWA: 400 ppm 10 hours.
 TWA: 1400 mg/m³ 10 hours.
OSHA PEL (United States, 2/2013).
 TWA: 400 ppm 8 hours.
 TWA: 1400 mg/m³ 8 hours.
NIOSH REL (United States, 10/2013).
 TWA: 800 ppm 10 hours.
 TWA: 1900 mg/m³ 10 hours.
ACGIH TLV (United States, 4/2014).
 STEL: 1000 ppm 15 minutes.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: 7
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
Evaporation rate	: 3.91 (butyl acetate = 1)
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 1.9% Upper: 19%
Vapor pressure	: 13.5 kPa (101.325 mm Hg) [at 20°C]
Vapor density	: 1.5 [Air = 1]
Relative density	: 0.75
Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): <0.205 cm ² /s (<20.5 cSt) Kinematic (40°C (104°F)): <0.205 cm ² /s (<20.5 cSt)

Aerosol product

Type of aerosol	: Spray
Heat of combustion	: 0.00002626 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Rat	7 g/kg	-
Ethyl Acetate	LD50 Oral	Rat	5620 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.06666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Ethanol	-	1	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Butane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Ethanol	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Butane	Category 2	Not determined	Not determined

Aspiration hazard

Name	Result
Propane	ASPIRATION HAZARD - Category 1
Butane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

General	: May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity	: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
	Ethyl Acetate	Acute EC50 2500000 µg/l Fresh water	Algae - Selenastrum sp.
Acute LC50 750000 µg/l Fresh water		Crustaceans - Gammarus pulex	48 hours
Acute LC50 154000 µg/l Fresh water		Daphnia - Daphnia cucullata	48 hours
Acute LC50 212500 µg/l Fresh water		Fish - Heteropneustes fossilis	96 hours
Chronic NOEC 2400 µg/l Fresh water		Daphnia - Daphnia magna	21 days
Chronic NOEC 75.6 mg/l Fresh water		Fish - Pimephales promelas - Embryo	32 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethanol	-	-	Readily
Ethyl Acetate	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Ethyl Acetate	-	30	low

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> (ERG#126)	<u>Special provisions</u> LIMITED QUANTITY	<u>Emergency schedules (EmS)</u> LIMITED QUANTITY, F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations :

State regulations

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	3
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

SAFETY DATA SHEET

01728-XXXX

1/23/2018

SECTION I - IDENTIFICATION**Material Name**

BLICK WATERCOLORS

Company Information

Dick Blick Art Materials
 1849 Green Bay Rd., Renaissance PL., Ste 310
 Highland Park, IL 60035-3151
 Phone: 847-266-8775
 Email: s.campbell@dickblick.com

For transportation emergencies only call: 1-847-681-6831
 For health emergencies call the Poison Control Center: 1-800-222-1222

SECTION II - HAZARDS IDENTIFICATION**Classification in accordance with paragraph (d) of 29 CFR 1910.1200.**

Hazardous to the Aquatic Environment - Acute - Category 1
 Hazardous to the Aquatic Environment - Chronic - Category 1

GHS Label Elements**Symbol(s)****Signal Word(s)**

Danger

Hazard Statement(s)

Very toxic to aquatic life Very toxic to aquatic life with long lasting effects

Precautionary Statement(s)**Prevention**

Avoid release to the environment.

Response

Collect spillage.

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
ZINC	1314-13-2	N/A	48.44000	N	N
COBALT	7440-48-4	0.05	16.81300	Y	Y

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: If swallowed, get prompt medical attention.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME): NOT EXPLOSIVE
EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE
AUTOIGNITION TEMPERATURE: N/A

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: Do not spray apply. Avoid ingestion.
ENGINEERING CONTROLS: **KEEP OUT OF REACH OF CHILDREN.**

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
VAPOR PRESSURE: N/A
SPECIFIC VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: N/A
MELTING POINT: N/A
SPECIFIC GRAVITY: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: N/A
STABILITY: STABLE CONDITIONS TO AVOID: N/A
INCOMPATIBILITY (MATERIALS TO AVOID): N/A
HAZARDOUS DECOMPOSITION PRODUCTS: N/A

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: MAY BE HARMFUL IF SWALLOWED.
EXPOSURE MAY RESULT IN SHORTNESS OF BREATH, CHEST PAIN, CHEST TIGHTNESS, WHEEZING AND A COUGH.
The summated LD50 is 2465.7 mg/kg.
The summated LC50 is 28613 mg/cubic meter.
This product is considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

Aquatic Hazard Statement(s)

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.

WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200

EPA SARA TITLE III CHEMICAL LISTINGS:

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):

NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:

COPPER PHTHALOCYANINE

FERRIC OXIDE

GUM ARABIC

PROPYLENE GLYCOL

ZINC OXIDE

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:

GUM ARABIC

PIGMENT RED 101

PIGMENT WHITE 6

PROPYLENE GLYCOL

ZINC OXIDE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:

CADMIUM SELENIDE SULFIDE (CD₂SES)

CADMIUM ZINC SULFIDE

COBALT TIN OXIDE (COSNO₃)

PHOSPHORIC ACID, AMMONIUM COBALT(2+) SAL

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN FLORIDA'S TOXIC SUBSTANCE LIST:

Iron oxide fume

Zinc oxide fume

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MAINE'S PRIORITY CHEMICAL LIST:

NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS CONSIDERED BY VERMONT AS BEING OF VERY HIGH CONCERN TO CHILDREN:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MASSACHUSETTS HAZARDOUS SUBSTANCE LIST:

Carbon black
Glycerine mist
Iron oxide dust
Sucrose dust
Titanium dioxide
Zinc oxide fume

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED ON MICHIGAN'S CRITICAL MATERIALS REGISTER:
NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED ON MINNESOTA'S HAZARDOUS SUBSTANCES LIST:

Carbon black
Glycerin mist
Iron oxide fume (Fe₂O₃) as Fe
Propylene glycol
Sucrose
Titanium dioxide
Zinc oxide, fume and dust

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN PENNSYLVANIA'S HAZARDOUS SUBSTANCES LIST:

1,2,3-Propanetriol
1,2-Propanediol
Alpha-D-glucopyranoside, .beta.-d-fructo
Carbon black
Iron oxide
Titanium oxide
Zinc oxide

Under CPSC's consumer product regulations (16CFR1500.3 and 1500.14), this product has the following required acute and chronic hazard labeling:

WARNING: MAY BE HARMFUL IF SWALLOWED. INHALATION MAY CAUSE RESPIRATORY ALLERGIES, OR LUNG DAMAGE.

Contains: COBALT, ZINC

PRECAUTIONS: Do not spray apply. Avoid ingestion. **KEEP OUT OF REACH OF CHILDREN.**

FIRST AID TREATMENT: If swallowed, get prompt medical attention.

For further health information contact a poison control center or call . . . (must contain a US telephone # and US company name and address on the label).

This product contains a chemical known to the State of California to cause cancer.

This product contains cadmium, a chemical known to the State of California to cause cancer, birth defects and other reproductive harm.

SECTION XVI - OTHER INFORMATION

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

LAST REVISION DATE: 06/14/2016

Prepared by Duke OEM Toxicology

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS

Product Color	SKU	Hazardous Ingredient
ALIZARIN CRIMSON		(NONE)
BURNT ALIZARIN/CRIMSON GOLDEN		(NONE)
AUREOLIN YELLOW		(NONE)
TRANSPARENT ORANGE		(NONE)
BROWN MADDER		(NONE)
BURNT SIENNA		(NONE)
BURNT UMBER		(NONE)
CADMIUM ORANGE		(NONE)
CADMIUM RED DEEP		(NONE)
CADMIUM RED LIGHT		(NONE)
CADMIUM RED MEDIUM		(NONE)
CADMIUM YELLOW DEEP		(NONE)
CADMIUM YELLOW LEMON		(NONE)
CADMIUM YELLOW LIGHT		(NONE)
CADMIUM YELLOW MEDIUM		(NONE)
CERULEAN BLUE		(NONE)
TITANIUM WHITE		(NONE)
CHINESE WHITE		ZINC
CHROMIUM OXIDE GREEN (LIGHT)		(NONE)
COBALT BLUE		(NONE)
COBALT VIOLET		COBALT
BISMUTH YELLOW		(NONE)
DIOXAZINE PURPLE		(NONE)
DAVY'S GRAY		(NONE)
PERMANENT GREEN (EMERALD)		(NONE)
RED IRON OXIDE (ENGLISH RED)		(NONE)
FRENCH ULTRAMARINE (LIGHT)		(NONE)
GAMBOGE		(NONE)
TERRE VERDE		(NONE)
TRUE RED LIGHT		(NONE)
MAGENTA		(NONE)
HOOKER'S GREEN DEEP		(NONE)
HOOKER'S GREEN LIGHT		(NONE)
DELFT BLUE		(NONE)
INDIAN RED		(NONE)
INDIAN YELLOW		(NONE)
INDIGO		(NONE)
IVORY BLACK		(NONE)
LAMP BLACK		(NONE)
LEMON YELLOW		(NONE)
MANGANESE BLUE HUE		(NONE)
COBALT TURQUOISE		(NONE)
NAPLES YELLOW		(NONE)
PAYNE'S GRAY		(NONE)
PERMANENT ALIZARIN		(NONE)
PRUSSIAN BLUE		(NONE)
RAW SIENNA		(NONE)
RAW UMBER		(NONE)
ALIZARIN ROSE (MADDER)		(NONE)
SAP GREEN		(NONE)
SEPIA NATURAL LIGHT		(NONE)
SEPIA (WARM)		(NONE)
PTHALO BLUE		(NONE)
QUINACRIDONE ROSE (THALO CRIMSON)		(NONE)
PTHALO GREEN (LIGHT)		(NONE)
PTHALO PURPLE		(NONE)
PTHALO RED		(NONE)

Product Color	SKU	Hazardous Ingredient
PTHALO YELLOW GREEN		(NONE)
QUINACRIDONE MAGENTA (THALO VIOLET)		(NONE)
ULTRAMARINE BLUE		(NONE)
VAN DYCK BROWN		(NONE)
VERMILLION DEEP		(NONE)
VERMILLION LIGHT		(NONE)
VIRIDIAN		(NONE)
YELLOW OCHRE		(NONE)

BRAND NAMES

THIS SDS APPLIES TO THE FOLLOWING BRAND NAMES

Brand Name

BLICK WATER COLOR

01730-1003

SAFETY DATA SHEET**SDS #: 559**

Emergency Medical Number: Poison Control 800-222-1222 Page 1 of 3
Emergency Transport Number: Chemtrec 800-424-9300
or (01) 703-527-3887 (CCN4391)
General Inquiry Number: Chartpak 413-584-5446

Chartpak, Inc.
 One River Road
 Leeds, MA 01053
 Phone: 413-584-5446 or 800-628-1910

Date 12/17/19

Section One: Product Information

Product Name: Miskit Liquid Frisket
 Product Sizes: 35 ml
 Product Class: Mediums

Section Two: Ingredients

Ingredients	CAS Number	% by Weight	PEL/TLV
Natural Rubber Latex	9006-04-6	80.0%	N/A

Section Three: Hazards Identification

WARNING: EXPOSURE MAY CAUSE ALLERGIC REACTIONS, OR HARM TO THE DEVELOPING FETUS. EXPOSURE MAY RESULT IN DIFFICULTY WITH REPRODUCTION (CHILD BEARING). EXPOSURE MAY CAUSE DAMAGE TO THE TESTES OR DIFFICULTY WITH REPRODUCTION (CHILD BEARING), OR DAMAGE TO THE NERVOUS SYSTEM.

CONTAINS: NATURAL RUBBER LATEX, TETRAMETHYL THIURAM DISULFIDE.

Section Four: First Aid Measures

Inhalation: Remove to fresh air.

Skin Contact: Wash with soap and water.

Eye Contact: Flush with flowing water.

Ingestion: Consult a physician. For further health information, contact a poison control center

This Material Safety Data Sheet is applicable to the consumer use of the following colors: 559

SAFETY DATA SHEET**SDS #: 559**

Page 2 of 3

Section Five: Fire Fighting Measures

Flash Point: Not flammable

Flammability Limits (% by volume): Lower: Not explosive Upper: Not explosive

Extinguishing Media: Carbon dioxide, dry chemical, alcohol, or foam

Special Fire Fighting Measures: No special fire fighting procedures.

Unusual Fire and Explosion Hazards: Dried form will support combustion.

Section Six: Accidental Release Measures

Neutralize with acid. Mop off with water. If dried, peel off.

Section Seven: Handling and Storage

Handling: Do not use if allergic to natural rubber latex.

Storage: Store at room temperature.

Section Eight: Exposure Controls and Personal Protection

Respiratory Protection and Special Ventilation Requirements: None required

Other Protective Equipment (Gloves, Goggles, Etc.): Gloves, eye protection, and apron are recommended.

Work/Hygiene Practices: PRECAUTIONS: Wash hands immediately after use. When using, do not eat, drink, or smoke. Wear a work apron. AVOID USING IF PREGNANT OR CONTEMPLATING PREGNANCY. Do not use if allergic to natural rubber latex. Not for use by children.

Section Nine: Physical and Chemical Properties

Boiling Point: Not determined Melting Point: Not determined

Vapor Pressure: Not determined Specific Gravity: 0.95

Specific Vapor Density (AIR = 1): Heavier than air Evaporation Rate (Butyl Acetate = 1): Slower

Solubility in Water: Negligible Reactivity in Water: Non-reactive

Appearance and Odor: Milky latex; slight odor

Section Ten: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Freezing and boiling temperatures

Chemical Incompatibility: Heavy metal ions or acids will cause coagulation

Hazardous Decomposition: Oxides of carbon

Hazardous Polymerization: Will not occur

SAFETY DATA SHEET**SDS #: 559**

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Section Eleven: Toxicological Information

IARC Monographs: No

National Toxicology Program: No

OSHA Regulated: No

Effects/Symptoms of Acute Exposure: Irritating to the mucous membranes and eye irritation.

Effects/Symptoms of Chronic Exposure: Allergic reactions and difficulty in child bearing

Medical Conditions Usually Aggravated By Overexposure of This Product: Unknown

Section Twelve: Ecological Information

Not available

Section Thirteen: Disposal Considerations

Dispose in accordance with Federal, State, and Local Regulations.

Section Fourteen: Transport Information

Not regulated as a hazardous material by DOT, IMO, or IATA.

Section Fifteen: Regulatory Information

TSCA INVENTORY:

The product on this Material Safety Data Sheet is not listed on the United States Environmental Protection Agency Toxic Substances Control Act Inventory. However, the components of the product are included in the TSCA Inventory.

Section Sixteen: Other Information

HMIS Code	
Health	2
Flammability	1
Reactivity	0
Personal Protection	C

Chartpak, Inc. is a member of the Art and Creative Materials Institute, Inc. This product is certified by the Institute to be labeled in accordance with the voluntary chronic hazard labeling standard ASTM D4236 and is labeled with the CL (Cautionary Label) Seal. Products bearing the CL Seal are certified to be properly labeled in a program of toxicological evaluation by a medical expert for any known health risks and with information on the safe and proper use of these materials. Conforms to ASTM D4236.

0=Minimal / 4 = Severe

May be used to comply with OSHA Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.

SAFETY DATA SHEET

9/28/2015

SECTION I - IDENTIFICATION

Material Name
BLICK LIQUID WATERCOLORS
Company Information

For transportation emergencies only call: 414-563-5323

For health emergencies call the Poison Control Center: 1-800-222-1222

SECTION II - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

There are no GHS label elements.

PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, EYE, SKIN

EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE: NONE EXPECTED

EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE: NONE EXPECTED

CARCINOGEN LISTING: NTP: NO IARC: NO OSHA: NO

SEE SECTION III FOR COMPONENTS AFFECTED

MEDICAL CONDITIONS USUALLY AGGRAVATED BY OVER EXPOSURE TO THIS PRODUCT: NONE

SECTION III - COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

<u>Hazardous Ingredients</u>	<u>CAS/EC #</u>	<u>PEL/TLV (MG/M#)</u>	<u>Max % Weight</u>	<u>NTP</u>	<u>IARC</u>
None					

SECTION IV - FIRST AID MEASURES

FIRST AID MEASURES: NONE REQUIRED NO ACUTE HEALTH EFFECTS EXPECTED.

SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (METHOD): N/A
EXPLOSION LIMITS IN AIR (% BY VOLUME) NOT EXPLOSIVE

AUTOIGNITION TEMPERATURE: N/A

Page 1

EXTINGUISHING MEDIA: NO SPECIAL MEDIA REQUIRED
FIRE FIGHTING PROCEDURES: NO SPECIAL FIRE FIGHTING PROCEDURES REQUIRED
UNUSUAL FIRE & EXPLOSION HAZARDS: NOT COMBUSTIBLE

SECTION VI - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE A MATERIAL IS SPILLED: Clean up in accordance with all applicable regulations. Absorb spillage with non-combustible, absorbent material. For waste disposal, see Section XIII

SECTION VII - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING STORAGE AND HANDLING: Good industrial hygiene practice requires that exposure be maintained below the TLV. This is preferably achieved through the provision of adequate ventilation. When exposure cannot be adequately controlled in this way, personal respiratory protection should be employed.

SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATORY PROTECTION AND SPECIAL VENTILATION REQUIREMENTS: NONE REQUIRED
OTHER PROTECTIVE EQUIPMENT (GLOVES, GOGGLES, ETC): NONE REQUIRED
WORK/HYGIENE PRACTICES: NONE REQUIRED
ENGINEERING CONTROLS: NONE REQUIRED

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
VAPOR PRESSURE: N/A
SPECIFIC VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: N/A

MELTING POINT: N/A
SPECIFIC GRAVITY: N/A
REACTIVITY IN WATER: NON-REACTIVE

SECTION X - STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION PRODUCTS: N/A
STABILITY: STABLE CONDITIONS TO AVOID: N/A
INCOMPATIBILITY (MATERIALS TO AVOID): N/A
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and smoke

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS ASSOCIATED WITH USE OF THIS MATERIAL: NONE EXPECTED
The summated LD50 is 39037 mg/kg.
The summated LC50 is 80115 mg/cubic meter.
This product is not considered to be a known or suspected human carcinogen by NTP, IARC or OSHA (see section III)

SECTION XII - ECOLOGICAL INFORMATION

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER.

SECTION XIII - DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS (40 CFR 261): THIS PRODUCT IS NOT CLASSIFIED AS A HAZARDOUS WASTE.
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORTATION INFORMATION

[U.S. DOT (49 CFR 172.101): THIS IS NOT A HAZARDOUS MATERIAL AS CLASSIFIED BY CFR 172.101.]

SECTION XV - REGULATORY INFORMATION

CONTENTS OF THIS SDS COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200
EPA SARA TITLE III CHEMICAL LISTINGS
NONE

SECTION 302.4 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
NONE

SECTION 313 TOXIC CHEMICALS (40 CFR 372):
NONE

INTERNATIONAL REGULATIONS

CANADIAN WHMIS: THIS PRODUCT IS A CONTROLLED PRODUCT UNDER CANADA'S WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. IT CONTAINS THE FOLLOWING TOXIC OR HIGHLY TOXIC MATERIALS:

CITRIC ACID
MICA
MICA/IRON OXIDE
PROPYLENE GLYCOL
TETRASODIUM PYROPHOSPHATE

SUPPLEMENTAL STATE COMPLIANCE INFORMATION:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED UNDER NEW JERSEY'S RIGHT TO KNOW PROGRAM:

MICA
MICA/IRON OXIDE
PROPYLENE GLYCOL
TETRASODIUM PYROPHOSPHATE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) REQUIRING NOTIFICATION TO THE STATE OF WASHINGTON UNDER THEIR CHILDREN'S SAFE PRODUCTS ACT:

NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN FLORIDA'S TOXIC SUBSTANCE LIST:

Mica dust
Tetrasodium pyrophosphate

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MAINE'S PRIORITY CHEMICAL LIST:

NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS CONSIDERED BY VERMONT AS BEING OF VERY HIGH CONCERN TO CHILDREN:

NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN MASSACHUSETTS HAZARDOUS SUBSTANCE LIST:

Glycerine mist
Mica Dust
Tetrasodium pyrophosphate

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED ON MICHIGAN'S CRITICAL MATERIALS REGISTER:

NONE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED ON MINNESOTA'S HAZARDOUS SUBSTANCES LIST:

Glycerin mist
Propylene glycol
Tetrasodium pyrophosphate

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) LISTED IN PENNSYLVANIA'S HAZARDOUS SUBSTANCES LIST:

1,2,3-Propanetriol
1,2-Propanediol

Diphosphoric acid, tetrasodium salt
Mica-group minerals

Under CPSC's consumer product regulations (16CFR1500.3 and 150014), this product has the following required acute and chronic hazard labeling:

NONE

SECTION XVI - OTHER INFORMATION

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

LAST REVISION DATE: 09/28/2015

Prepared by Duke OEM Toxicology

COLOR INFORMATION

THIS SDS APPLIES TO THE FOLLOWING COLORS WHICH ARE ASSOCIATED WITH HAZARDOUS AND/OR NON-HAZARDOUS INGREDIENTS

Product Color	SKU	Hazardous Ingredient
010 YELLOW		(NONE)
015 ORANGE		(NONE)
020 RED		(NONE)
022 PINK		(NONE)
025 MAGENTA		(NONE)
028 FUCHSIA		(NONE)
030 BLUE		(NONE)
035 TURQUOISE		(NONE)
040 VIOLET		(NONE)
045 GREEN		(NONE)
050 BROWN		(NONE)
055 BLACK		(NONE)
153 FL. HOT PINK		(NONE)
154 FL. RED		(NONE)
156 FL. BLUE		(NONE)
158 FL. GREEN		(NONE)
162 GOLD		(NONE)
164 COPPER		(NONE)
166 SILVER		(NONE)
168 PEARL		(NONE)
BLICK ANTIQUE GOLD		(NONE)
BLICK BLUE GREEN		(NONE)
BLICK BLUE-VIOLET		(NONE)
BLICK CORAL		(NONE)
BLICK FLUORESCENT CHARTREUSE		(NONE)
BLICK FLUORESCENT CHARTREUSE		(NONE)
BLICK FLUORESCENT YELLOW ORANGE		(NONE)
BLICK PIRATE GOLD		(NONE)
BLICK RED-VIOLET		(NONE)
BLICK VIOLET		(NONE)
BLICK YELLOW GREEN		(NONE)
BLICK YELLOW ORANGE		(NONE)

**MSDS**

CONFIDENTIAL

Page 1 of 2

Re-order No.: BWK 354-W75
Boardwalk Disinfecting Wipe
75 count Fresh Scent Canister
Version: 1.0 Replaces: N/AEffective Date: 9/2/2011
Review Date: 9/2/2011

May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072IDENTITY (As used on label and list)
Boardwalk Disinfecting Wipe

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section IManufactured for:
LAGASSE INC.Emergency Telephone Number
1 (800) 255-3924
Chemtel

Address (Number, Street, City, State, and ZIP Code)

Telephone Number for Information
1 (800) 989-7487

One Parkway North Blvd.

Date Prepared
9/2/2011

Deerfield, IL 60015.

Signature of Preparer (optional)

Section II – Hazardous Ingredients / Identity Information

Other Limits

Hazardous Components (Specific Chemical Identity; Common Names(s)) OSHA PEL ACGIH TLV
Recommended

N/A

Section III - Physical / Chemical CharacteristicsBoiling Point
APPROX 212 °FSpecific Gravity (H₂O – 1)
APPROX 1.0Vapor Pressure (mm Hg)
N/AMelting Point
N/AVapor Density (Air = 1)
N/AEvaporation Rate (Butyl Acetate = 1)
N/ASolubility in Water
Soluble in waterAppearance in Water
N/A**Section IV – Fire and Explosion Hazard Data**Flash Point (Method Used)
N/AFlammable Limits
N/ALEL
N/AUEL
N/AExtinguishing Media
N/ASpecial Fire Fighting Procedures
N/AUnusual Fire and Explosion Hazards
N/A



MSDS

Re-order No.: BWK 354-W75
 Boardwalk Disinfecting Wipe
 75 count Fresh Scent Canister
 Version: 1.0 Replaces: N/A

CONFIDENTIAL
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Effective Date: 9/2/2011
 Review Date: 9/2/2011

Section V – Reactivity Data

Stability	Unstable <input type="checkbox"/>	Conditions to Avoid
	Stable <input checked="" type="checkbox"/>	
Incompatibility (Materials to Avoid) N/A		Hazardous Decomposition of Byproducts N/A
Hazardous Polymerization	May Occur <input type="checkbox"/>	Conditions to Avoid
	Will Not Occur <input checked="" type="checkbox"/>	

Section VI – Health Hazard Data

Route(s) of Entry:	Inhalation? No	Skin? No	Ingestion? No
Health Hazards None			
Carcinogenicity:	NTP? No	IARC Monographs? N/A	OSHA Regulated? No
Signs and Symptoms of Exposure N/A		Medical Conditions Generally Aggravated by Exposure N/A	
Emergency and First Aid Procedures			
INGESTION: CONTACT A PHYSICIAN			
EYE CONTACT: FLUSH WITH WATER			

Section VII – Precautions for Safe Handling and Use

Steps to be Taken In Case Material is Released or Spilled	
WASH LOTION DOWN DRAIN WHERE LOCAL ORDINANCE PERMITS FLUSH WITH COPIOUS AMOUNTS OF WATER	
Precautions to be Taken in Handling and Storing No special precautions required	Other Precautions Good personal hygiene practices

Section VIII – Control Measures

Respiratory Protection (Specify Type) No special precautions required		
Ventilation	Local Exhaust No special precautions required	Special No special precautions required
	Mechanical (General) No special precautions required	Other No special precautions required
Protective Gloves No special precautions required	Eye Protection No special precautions required	
Other Protective Clothing or Equipment No special precautions required	Work/Hygienic Practices Good personal hygiene practices.	

This data is offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

SAFETY DATA SHEET

BOARDWALK STAINLESS STEEL CLEANER 20N18

BWK347A

Version 2.3

Revision Date 12/22/2016

Print Date 03/21/2017

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : Boardwalk Stainless Steel Cleaner BWK347A

Material number : 1041284 / A00142

Manufacturer or supplier's details

Company : Boardwalk / Essendant Co.

Address : One Parkway North
Deerfield, IL 60015

Telephone : 844-828-5617

Emergency telephone numbers**For SDS Information** : 844-828-5617**For a Medical Emergency** :**For a Transportation
Emergency** : Chemtel: 1(800)255-3924**Recommended use of the chemical and restrictions on use**

Recommended use : Cleaner

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Aerosol containing a liquefied gas
Colour	light cream
Odour	characteristic

GHS Classification

Gases under pressure : Liquefied gas

Skin sensitisation : Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H280 Contains gas under pressure; may explode if heated.
H317 May cause an allergic skin reaction.Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 If skin irritation or rash occurs: Get medical

SAFETY DATA SHEET**BOARDWALK STAINLESS STEEL CLEANER 20N18****BWK347A**

Version 2.3

Revision Date 12/22/2016

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advice/ attention.

P363 Wash contaminated clothing before reuse.

Storage:

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal:

Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
Distillates (petroleum), hydrotreated light	64742-47-8	>= 10 - < 20
propane	74-98-6	>= 5 - < 10
butane	106-97-8	>= 1 - < 5
Naphtha (petroleum), hydrotreated light	64742-49-0	>= 1 - < 5
Solvent naphtha (petroleum), heavy aliph.	64742-96-7	>= 1 - < 5
citral	5392-40-5	>= 0.1 - < 1

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
Wash off immediately with plenty of water for at least 15 minutes.
If on clothes, remove clothes.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Effects are immediate and delayed.
Symptoms may include irritation, redness, pain, and rash.
Causes skin irritation.
Review section 2 of SDS to see all potential hazards.

SAFETY DATA SHEET

BOARDWALK STAINLESS STEEL CLEANER 20N18

BWK347A

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Revision Date 12/22/2016

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Notes to physician : Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
Water spray jet
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon dioxide (CO₂)
Carbon monoxide
Smoke
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Evacuate personnel to safe areas.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Ensure adequate ventilation.
Remove all sources of ignition.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Do not breathe vapours or spray mist.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.

SAFETY DATA SHEET**BOARDWALK STAINLESS STEEL CLEANER 20N18****BWK347A**

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For personal protection see section 8.
 Smoking, eating and drinking should be prohibited in the application area.
 Dispose of rinse water in accordance with local and national regulations.
 Always replace cap after use.

Conditions for safe storage : BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects.
 No smoking.
 Keep in a dry, cool and well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Observe label precautions.
 Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA	500 ppm 2,000 mg/m3	OSHA Z-1
		TWA	400 ppm 1,600 mg/m3	OSHA P0
		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Mist)	5 mg/m3	OSHA P0
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
propane	74-98-6	PEL (particulate)	5 mg/m3	CAL PEL
		TWA	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,800 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,800 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,800 mg/m3	OSHA P0
		PEL	1,000 ppm 1,800 mg/m3	CAL PEL
butane	106-97-8	TWA	800 ppm 1,900 mg/m3	NIOSH REL
		TWA	800 ppm 1,900 mg/m3	OSHA P0
		PEL	800 ppm 1,900 mg/m3	CAL PEL
citral	5392-40-5	TWA (Inhalable fraction and	5 ppm	ACGIH

SAFETY DATA SHEET

BOARDWALK STAINLESS STEEL CLEANER 20N18

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	vapor)		
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Hazardous components without workplace control parameters

Engineering measures : effective ventilation in all processing areas

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Safety glasses
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Aerosol containing a liquefied gas

Colour : light cream

Odour : characteristic

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Boiling point : No data available

Flash point :
No data available

Evaporation rate : No data available

Flammability (solid, gas) : The product is not flammable.

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Density : 0.938 g/cm³

Solubility(ies)

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Water solubility	: partly soluble
Solubility in other solvents	: not determined
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: not determined
Thermal decomposition	: No data available
Viscosity	
Viscosity, kinematic	: No data available
Heat of combustion	: 15.00 kJ/g

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	: Oxidizing agents
Hazardous decomposition products	: Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition	: None known.
Symptoms of Overexposure	: Effects are immediate and delayed. Symptoms may include irritation, redness, pain, and rash.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Components:

Distillates (petroleum), hydrotreated light:

Acute oral toxicity : LD50 Rat: > 5,000 mg/kg

Acute inhalation toxicity : LC50 Rat: > 4.6 mg/l
Exposure time: 6 h

Acute dermal toxicity : LD50 Rat: > 2,000 mg/kg

propane:

Acute inhalation toxicity : LC50 Mouse: 1,237 mg/l
Exposure time: 2 h

LC50 Rat: 658 mg/l
Exposure time: 4 h

LC50 Rat: 1,355 mg/l

butane:

Acute inhalation toxicity : LC50 Mouse: 1,237 mg/l
Exposure time: 2 h

LC50 Rat: 1,355 mg/l

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: May irritate eyes.

Respiratory or skin sensitisation

Product:

Remarks: Causes sensitisation.

Germ cell mutagenicity

No data available

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Carcinogenicity

No data available

Reproductive toxicity

No data available

Distillates (petroleum), hydrotreated light:
propane:
butane:
Naphtha (petroleum), hydrotreated light:
Solvent naphtha (petroleum), heavy aliph.:
citral:

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

Components:

Distillates (petroleum), hydrotreated light:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-
octanol/water : Remarks: No data available

Components:

butane :

Partition coefficient: n-
octanol/water : Pow: 2.89

citral :

Partition coefficient: n-
octanol/water : Pow: 2.76

Mobility in soil

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No data available

Other adverse effects

No data available

Product:

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life with long lasting effects.

Components:

Distillates (petroleum), hydrotreated light :

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
ORM-D, CONSUMER COMMODITY

Transportation Regulation: IMDG (Vessel):
UN1950, AEROSOLS, 2.2, - Limited quantity

Transportation Regulation: IATA (Cargo Air):
UN1950, AEROSOLS, 2.2, - Limited quantity

Transportation Regulation: IATA (Passenger Air):
UN1950, AEROSOLS, 2.2, - Limited quantity

Transportation Regulation: TDG (Canada):

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UN1950, AEROSOLS, 2.2, - Limited quantity

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
xylenes	1330-20-7	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Sudden Release of Pressure Hazard
Acute Health Hazard

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

ethylbenzene	100-41-4
benzene	71-43-2
naphthalene	91-20-3

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

toluene	108-88-3
benzene	71-43-2

The components of this product are reported in the following inventories:

TSCA On TSCA Inventory
DSL This product contains one or several components that are not on the Canadian DSL nor NDSL.

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

Inventory Acronym and Validity Area Legend:

TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

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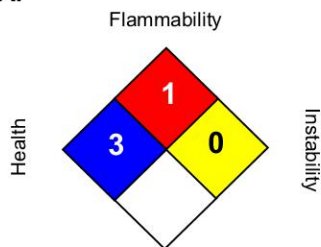
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Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	2

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA GHS Label Information:

Hazard pictograms :



Signal word :

Warning:

Hazard statements :

Contains gas under pressure; may explode if heated. May cause an allergic skin reaction.

Precautionary statements :

Prevention: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse.

Storage: Protect from sunlight. Store in a well-ventilated place.

Disposal: Dispose of contents/container in accordance with local regulation.

Version:	2.3
Revision Date:	12/22/2016
Print Date:	03/21/2017

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes. This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Safety Data Sheet

Bogen Universal Indicator Solution

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Bogen Universal Indicator Solution
Recommended Use: Science education applications
Synonyms: Universal pH Indicator
Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215-3398
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
Chemtec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING



Flammable liquid and vapor.

GHS Classification:
Flammable Liquid Category 3

Acute Toxicity Dermal Contains 95.4875 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Vapor Contains 52.5 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains 52.5 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	52.4
Ethanol	64-17-5	43
2-Propanol	67-63-0	2.4
Methanol	67-56-1	2.1
Bromothymol Blue, Sodium Salt	34722-90-2	0.06
Phenolphthalein	77-09-8	0.06
Methyl Red	845-10-3	0.02

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media: Use dry chemical, CO2 or appropriate foam.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Vapors may travel back to ignition source. Closed Containers exposed to heat may explode.
Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Safety Data Sheet

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled:

No health effects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Ventilate the contaminated area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7 Handling and Storage

Handling: Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection.

Storage: Keep container tightly closed. Store in a well-ventilated place. Keep cool.

Storage Code: Red - Flammables. Store in approved flammable containers. Store away from oxidizing materials.

Section 8 Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Ethanol	N/A	1000 ppm STEL	1000 ppm TWA, 1900 mg/m ³ TWA	N/A
2-Propanol	200 ppm TWA	400 ppm STEL	400 ppm TWA; 980 mg/m ³ TWA	N/A
Methanol	200 ppm TWA	250 ppm STEL	200 ppm TWA; 260 mg/m ³ TWA	N/A
Bromothymol Blue, Sodium Salt	N/A	N/A	N/A	N/A
Phenolphthalein	N/A	N/A	N/A	N/A
Methyl Red, Sodium Salt	N/A	N/A	N/A	N/A

Control Parameters

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Personal Protective Equipment (PPE): Lab coat, apron, eye wash, safety shower.

Respiratory Protection: No respiratory protection required under normal conditions of use. Provide general room exhaust ventilation if symptoms of overexposure occur as explained Section 11. A respirator is not normally required.

Respirator Type(s): None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

Eye Protection: Wear chemical splash goggles when handling this product. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves: Nitrile

Section 9 Physical Data

Formula: See Section 3

Molecular Weight: No data available

Appearance: Dark Red Liquid

Odor: Moderate Alcohol Odor

Odor Threshold: No data available

pH: No data available

Melting Point: Estimated -32 C

Boiling Point: Estimated 81 C 79 C

Flash Point: Estimated 24 C

Flammable Limits in Air: Ethanol: 3.3 - 19%

Vapor Pressure: No data available

Evaporation Rate (BuAc=1): No data available

Vapor Density (Air=1): No data available

Specific Gravity: < 1

Solubility in Water: Soluble

Log Pow (calculated): No data available

Autoignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Percent Volatile by Volume: 47.5%

Section 10 Reactivity Data

Safety Data Sheet

Reactivity: Not generally reactive under normal conditions.
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Incompatible Materials: Water-reactive materials, Organic Peroxides, Strong acids, Oxidizing materials
Hazardous Polymerization: Will not occur

Section 11 Toxicity Data

Routes of Entry: Inhalation and skin contact.
Symptoms (Acute): Respiratory Irritation, Dermatitis, Central Nervous System Depression, Dizziness, Eye disorders
Delayed Effects: No data available

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Not applicable		
Ethanol	64-17-5	ORAL LD50 Rat 7060 mg/kg		INHALATION LC50-4H Rat 124.7 MG/L
2-Propanol	67-63-0	ORAL LD50 Rat 4396 mg/kg	DERMAL LD50 Rat 12800 mg/kg DERMAL LD50 Rabbit 12870 mg/kg	INHALATION LC50-4H Rat 72.6 MG/L
Methanol	67-56-1	ORAL LD50 Rat 5628 mg/kg	DERMAL LD50 Rabbit 15800 mg/kg	INHALATION LC50-4H Rat 83.2 MG/L INHALATION LC50-4H Rat 64000 ppm
Bromothymol Blue, Sodium Salt	34722-90-2			
Phenolphthalein	77-09-8			
Methyl Red, Sodium Salt	845-10-3			

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
Ethanol	64-17-5	Listed	Listed	Listed
2-Propanol	67-63-0	Listed	Not listed	Not listed
Methanol	67-56-1	Not listed	Not listed	Not listed
Bromothymol Blue, Sodium Salt	34722-90-2	Not listed	Not listed	Not listed
Phenolphthalein	77-09-8	Listed	Listed	Listed
Methyl Red, Sodium Salt	845-10-3	Not listed	Not listed	Not listed

Chronic Effects:

Mutagenicity: No evidence of a mutagenic effect.
Teratogenicity: No evidence of a teratogenic effect (birth defect).
Sensitization: No evidence of a sensitization effect.
Reproductive: No evidence of negative reproductive effects.

Target Organ Effects:

Acute: Central Nervous System, Eyes
Chronic: Eyes

Section 12 Ecological Data

Overview: This material is not expected to be harmful to the ecology.
Mobility: This material is expected to have high mobility in soil. It absorbs weakly to most soil types.
Persistence: Biodegradation, Evaporation into atmosphere
Bioaccumulation: Bioconcentration is not expected to occur.
Degradability: Biodegrades at a moderate rate.

Safety Data Sheet

Other Adverse Effects: No data

Chemical Name	CAS Number	Eco Toxicity
Ethanol	64-17-5	96 HR LC50 PIMEPHALES PROMELAS > 100 MG/L [STATIC] 48 HR EC50 DAPHNIA MAGNA 2 MG/L [STATIC] 24 HR EC50 DAPHNIA MAGNA 10800 MG/L
2-Propanol	67-63-0	48 HR LC50 DAPHNIA MAGNA 9268 - 14221 MG/L 96 HR LC50 LEPOMIS MACROCHIRUS > 1400000 µG/L 96 HR LC50 PIMEPHALES PROMELAS 11130 MG/L [STATIC] 48 HR EC50 DAPHNIA MAGNA 13299 MG/L 72 HR EC50 DESMODESMUS SUBSPICATUS > 1000 MG/L 96 HR EC50 DESMODESMUS SUBSPICATUS > 1000 MG/L
Methanol	67-56-1	96 HR LC50 PIMEPHALES PROMELAS > 100 MG/L [STATIC]
Phenolphthalein	77-09-8	
Methyl Red, Sodium Salt	845-10-3	

Section 13 Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s): If discarded, this product is considered a RCRA ignitable waste, D001.

Section 14 Transport Information

Ground - DOT Proper Shipping Name: UN 1170 ETHANOL SOLUTIONS Class 3 P.G. II	Air - IATA Proper Shipping Name: UN 1170 ETHANOL SOLUTIONS Class 3 P.G. II
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Section 15 Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Ethanol	64-17-5	No	No	No	No	No
2-Propanol	67-63-0	No	No	No	No	No
Methanol	67-56-1	Methanol	No	5000 lb final RQ; 2270 kg final RQ	No	No
Bromothymol Blue, Sodium Salt	34722-90-2	No	No	No	No	No
Phenolphthalein	77-09-8	Phenolphthalein	No	No	No	No
Methyl Red, Sodium Salt	845-10-3	No	No	No	No	No

California Prop 65: WARNING: This product contains a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.

Section 16 Additional Information

Revised: 06/20/2013

Replaces: 03/06/2013

Printed: 06-21-2013

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

Safety Data Sheet

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health



Bonide BurnOut Fast Acting Weed and Grass Killer Ready to Use

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : BurnOut Fast Acting Weed and Grass Killer Ready to Use
Product code : 7479, 7495 - 25B

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Bonide Products, Inc.
6301 Sutliff Road
Oriskany, NY 13424
T (315) 736-8231
www.bonide.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - 1 (800) 262-8200

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Eye Dam. 1 H318

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements (GHS-US) : P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

Mixture

Name	Product identifier	%	Classification (GHS-US)
Citric acid	(CAS No) 77-92-9	8	Skin Corr. 1A, H314
Clove Oil	(CAS No) 8000-34-8	2.6	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312

BurnOut Fast Acting Weed and Grass Killer Ready to Use

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SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Assure fresh air breathing. Allow the person to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: call doctor/physician. Get medical advice/attention. Specific treatment (see section 4 on this label).
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact	: Causes skin irritation.
--------------------------------------	---------------------------

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
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6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	: Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : children. Keep container closed when not in use.
Incompatible products	: Strong bases. strong acids.
Incompatible materials	: Sources of ignition.

7.3. Specific end use(s)

No additional information available

BurnOut Fast Acting Weed and Grass Killer Ready to Use

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Wear approved mask.
Other information	: When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: White to light yellow.
Odor	: Characteristic.
Odor threshold	: No data available
pH	: 2.05
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 4.4 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

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10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Clove Oil (8000-34-8)	
LD50 oral rat	1370 mg/kg (Rat)
LD50 dermal rabbit	1200 mg/kg (Rabbit)

Citric acid (77-92-9)	
LD50 oral rat	> 2000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Skin corrosion/irritation : Causes skin irritation.
pH: 2.05

Serious eye damage/irritation : Causes serious eye damage.
pH: 2.05

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after skin contact : Causes skin irritation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Bonide BurnOut Fast Acting Weed and Grass Killer Ready to Use	
Persistence and degradability	Not established.

Clove Oil (8000-34-8)	
Persistence and degradability	Biodegradability in water: no data available.

Citric acid (77-92-9)	
Persistence and degradability	No (test)data on mobility of the components available.

12.3. Bioaccumulative potential

Bonide BurnOut Fast Acting Weed and Grass Killer Ready to Use	
Bioaccumulative potential	Not established.

Clove Oil (8000-34-8)	
Bioaccumulative potential	No bioaccumulation data available.

Citric acid (77-92-9)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

BurnOut Fast Acting Weed and Grass Killer Ready to Use

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
No dangerous good in sense of transport regulations

Additional information

Other information : No supplementary information available.

SECTION 15: Regulatory information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION: Causes eye irritation. Wear safety glasses and gloves when applying. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. In case of contact, immediately flush eyes with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling.

15.1. US Federal regulations

No additional information available

15.2. International regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Irrit. 2	Skin corrosion/irritation Category 2
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage

SDS US (GHS HazCom 2012) - Pesticides

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Safety Data Sheet

Borax Solution 1%

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Borax 1%

Synonyms/Generic Names: Sodium borate solution

SDS Number: 105.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: No OSHA hazards.

Target Organs: None

Signal Word: None

Pictograms: None

GHS Classification:

Not a dangerous substance according to GHS.

GHS Label Elements, including precautionary statements:

Hazard Statements:

None

Precautionary Statements:

None

Potential Health Effects

Eyes	May cause eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	1
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	1
Fire	0
Reactivity	0
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Sodium Borate, Decahydrate	1	1303-96-4	215-540-4	Na ₂ B ₄ O ₇ ·10H ₂ O	381.37 g/mol
Water	99	7732-18-5	231-791-2	H ₂ O	18.00 g/mol

4. FIRST-AID MEASURES

Eyes	In case of eye contact, rinse with plenty of water and seek medical attention if necessary.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
Skin	Flush with plenty of water and wash using soap. Get medical attention if necessary.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (sodium oxides, boron oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE**Precautions for safe handling**

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Sodium Borate	2 mg/m ³	TLV	ACGIH
	6 mg/m ³	STEL	ACGIH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Liquid.
Odor	Not Available
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	Not Available
Solubility (ies)	Not Available
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Potassium, acid anhydrides.
Hazardous Decomposition Products	Boron oxides, sodium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	Not Available

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, itchiness.
Eyes	Irritation, redness, watering eyes, itchiness.
Respiratory	Irritation, coughing, wheezing.
Ingestion	Irritation, nausea, vomiting, diarrhea.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	Not Available
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	No SARA Hazards
SARA 312	No SARA Hazards
SARA 313	Not Listed
WHMIS Canada	Not Listed

16. OTHER INFORMATION

Revision	Date
Revision 1	01/14/2013

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.



Safety Data Sheet

Spartan Chemical Company, Inc.

Revision Date: 01-Oct-2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: BOUNCE BACK
Product Number: 4330
Recommended Use: Floor finish restorer
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:

Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Not Classified Not classified as hazardous by 29 CFR 1910.1200 (OSHA HazCom-GHS)

GHS Label Elements

Signal Word: No signal word
Symbols: None
Hazard Statements: No hazard statements
Precautionary Statements:
Prevention: Not Applicable
Response:
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Not Applicable
Disposal: Not Applicable

Hazards Not Otherwise Classified: Not Applicable

Other Information:

- May cause eye irritation.
- May cause skin irritation.
- May be harmful if swallowed.
- Inhalation of vapors or mist may cause respiratory irritation.
- Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	60-100
Acrylate Copolymer	65405-61-0	5-10
Ethylene Copolymer	67892-91-5	1-5

Ethoxydiglycol	111-90-0	1-5
Acrylic Polymer	PROPRIETARY	1-5
Tributoxyethyl Phosphate	78-51-3	0.1-1
Ammonium Hydroxide	1336-21-6	0.1-1
Zinc Ammonium Carbonate	38714-47-5	0.1-1
Fragrance	PROPRIETARY	<0.1
Fluorosurfactant	PROPRIETARY	<0.1
Methylchloroisothiazolinone	26172-55-4	<0.1
Dimethicone	63148-62-9	<0.1
Methylisothiazolinone	2682-20-4	<0.1

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

- Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Skin Contact:** Wash with soap and water. If skin irritation occurs: Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or physician if you feel unwell.
- Ingestion:** Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if you feel unwell.
- Note to Physicians:** Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable Extinguishing Media:** Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire
- Specific Hazards Arising from the Chemical:** Dried product is capable of burning. Combustion products are toxic.
- Hazardous Combustion Products:** May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.
- Protective Equipment and Precautions for Firefighters:** Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
- Environmental Precautions:** Do not rinse spill onto the ground, into storm sewers or bodies of water.
- Methods for Clean-Up:** Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE

- Advice on Safe Handling:** Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.
- Storage Conditions:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.
- Suggested Shelf Life:** 18 months from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Occupational Exposure Limits:** .

Engineering Controls:	Provide good general ventilation. If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.
Personal Protective Equipment	
Eye/Face Protection:	Not required with expected use.
Skin and Body Protection:	Not required with expected use.
Respiratory Protection:	Not required with expected use. If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.
General Hygiene Considerations:	Wash hands and any exposed skin thoroughly after handling. See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	White
Odor:	Floral fragrance
pH:	8.0-8.5
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F ASTM D56
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.023
Solubility(ies):	Miscible in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity:	This material is considered to be non-reactive under normal conditions of use.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	Not expected to occur with normal handling and storage.
Conditions to Avoid:	Extremes of temperature and direct sunlight.
Incompatible Materials:	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products:	May include carbon monoxide, carbon dioxide (CO ₂) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:	
-Eye Contact:	Pain and redness.
-Skin Contact:	Drying of the skin.
-Inhalation:	Nasal discomfort and coughing.
-Ingestion:	Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects	
Product Information:	Data not available or insufficient for classification.

Numerical Measures of Toxicity

The following acute toxicity estimates (ATE) are calculated based on the GHS document.

ATE_{mix} (oral): 75580 mg/kg

ATEmix (inhalation-dust/mist): 244.2 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
Ethoxydiglycol 111-90-0	= 10502 mg/kg (Rat)	= 9143 mg/kg (Rabbit)	> 5240 mg/m ³ (Rat) 4 h
Tributoxyethyl Phosphate 78-51-3	= 3 g/kg (Rat)	> 16 mL/kg (Rabbit)	> 6.4 mg/L (Rat) 4 h
Ammonium Hydroxide 1336-21-6	= 350 mg/kg (Rat)	Not Available	Not Available
Methylchloroisothiazolinone 26172-55-4	= 481 mg/kg (Rat)	Not Available	= 1.23 mg/L (Rat) 4 h
Dimethicone 63148-62-9	> 24 g/kg (Rat)	Not Available	Not Available

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Ethoxydiglycol 111-90-0	Not Available	10000: 96 h Lepomis macrochirus mg/L LC50 static 19100 - 23900: 96 h Lepomis macrochirus mg/L LC50 flow-through 11400 - 15700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11600 - 16700: 96 h Pimephales promelas mg/L LC50 flow-through	Not Available	3940 - 4670: 48 h Daphnia magna mg/L EC50
Tributoxyethyl Phosphate 78-51-3	Not Available	10.4 - 12.0: 96 h Pimephales promelas mg/L LC50 flow-through	Not Available	Not Available
Ammonium Hydroxide 1336-21-6	Not Available	8.2: 96 h Pimephales promelas mg/L LC50	Not Available	0.66: 48 h water flea mg/L EC50 0.66: 48 h Daphnia pulex mg/L EC50
Methylchloroisothiazolinone 26172-55-4	0.11 - 0.16: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.03 - 0.13: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	1.6: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	Not Available	4.71: 48 h Daphnia magna mg/L EC50 0.12 - 0.3: 48 h Daphnia magna mg/L EC50 Flow through 0.71 - 0.99: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability: No information available.

Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.

Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT: Not Regulated
Proper Shipping Name: Non-Hazardous Product

Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG: Not Regulated
Proper Shipping Name: Non-Hazardous Product

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)

All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313

This product contains the following listed substances:

Ethoxydiglycol

CAS No 111-90-0 applies to R-(OCH₂CH₂)_n-OR', where n = 1, 2, or 3, R=Alkyl C7 or less, or R = Phenyl or Alkyl substituted phenyl, R' = H or Alkyl C7 or less, or OR' consisting of Carboxylic acid ester, Sulfate, Phosphate, Nitrate, or Sulfonate
 Chemical Category N230

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

California Proposition 65

This product is not subject to warning requirements under California Proposition 65.

16. OTHER INFORMATION

NFPA	Health Hazards: 1	Flammability: 0	Instability: 0	Special: N/A
HMIS	Health Hazards: 1	Flammability: 0	Physical Hazards: 0	

Revision Date: 01-Oct-2019
Reasons for Revision: Section, 3, 7, 9, 11, and, 12

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.15.2017

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Bromobenzene

SECTION 1: Identification

Product identifier

Product name: Bromobenzene

Product code: KEMBB2700-A

Recommended use of the product and restriction on use

Relevant identified uses: Not determined or not applicable.

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

Supplier:

AquaPhoenix Scientific
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

AquaPhoenix Scientific Inc.
860 Gitts Run Road
Hanover
PA 17331
(717) 632-1291

Emergency telephone number:

United States

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazard(s) identification

GHS classification:

Flammable liquids, category 3

Skin irritation, category 2

Chronic aquatic hazard, category 2

Label elements

Hazard pictograms:



Signal word: Warning

Hazard statements:

H226 Flammable liquid and vapor

H315 Causes skin irritation

H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

P233 Keep container tightly closed

P240 Ground/bond container and receiving equipment

P241 Use explosion-proof electrical/ventilating/light/equipment

P242 Use only non-sparking tools

P243 Take precautionary measures against static discharge

P280 Wear protective gloves/protective clothing/eye protection/face protection

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.15.2017

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Bromobenzene

P264 Wash skin thoroughly after handling
P273 Avoid release to the environment
P303+P361+P353 If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower
P370+P378 In case of fire: Use agents recommended in section 5 for extinction
P321 Specific treatment (see supplemental first aid instructions on this label).
P362 Take off contaminated clothing and wash before reuse
P302+P352 If on skin: Wash with soap and water
P332+P313 If skin irritation occurs: Get medical advice/attention
P391 Collect spillage
P403+P235 Store in a well ventilated place. Keep cool
P501 Dispose of contents and container as instructed in Section 13

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 108-86-1	Bromobenzene	>99

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Not determined or not applicable.

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position

Maintain an unobstructed airway

Get medical advice/attention if you feel unwell

After skin contact:

Rinse affected area with soap and water

If symptoms develop or persist, seek medical attention

Wash affected area with soap and water

Seek medical attention if symptoms develop or persist

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

If symptoms develop or persist, seek medical attention

After swallowing:

Rinse mouth thoroughly

Seek medical attention if irritation, discomfort, or vomiting persists

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not applicable.

Delayed symptoms and effects:

Not determined or not applicable.

Immediate medical attention and special treatment

Specific treatment:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 11.15.2017

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Bromobenzene

Not determined or not applicable.

Notes for the doctor:

Not determined or not applicable.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Use Water (fog only), dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Vapors can flow to distant ignition sources and flashback

Liquid is volatile and may generate an explosive atmosphere

Special protective equipment for firefighters:

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

Special precautions:

Shut off sources of ignition

Carbon monoxide and carbon dioxide may form upon combustion

Heating causes a rise in pressure, risk of bursting and combustion

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation

Ensure air handling systems are operational

Wear protective eye wear, gloves and clothing

Beware of vapors accumulating to form explosive concentrations

Vapors can accumulate in low areas

Environmental precautions:

Should not be released into the environment

Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing

Use spark-proof tools and explosion-proof equipment

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)

Dispose of contents / container in accordance with local regulations

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Use only with adequate ventilation.

Avoid breathing mist or vapor.

Do not eat, drink, smoke or use personal products when handling chemical substances.

Take precautionary measures against electrostatic discharges.

Use only non-sparking tools.

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Bromobenzene

Conditions for safe storage, including any incompatibilities:

- Keep container tightly sealed.
- Protect from freezing and physical damage.
- Store in a cool, well-ventilated area.
- Store away from all ignition sources (open flames, hot surfaces, direct sunlight, spark sources).

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

No occupational exposure limits noted for the ingredient(s).

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls.
Biological monitoring may also be appropriate for some substances.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Use explosion-proof ventilation equipment.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Select glove material impermeable and resistant to the substance.
Wear appropriate clothing to prevent any possibility of skin contact.

Respiratory protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

General hygienic measures:

Avoid contact with skin, eyes and clothing.
Wash hands before breaks and at the end of work.
Wash contaminated clothing before reuse.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Aromatic odor
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	- 31°C
Initial boiling point/range	155°C
Flash point (closed cup)	51°C
Evaporation rate	Not determined or not available.

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Bromobenzene

Flammability (solid, gas)	Flammable liquid
Upper flammability/explosive limit	2.5 %
Lower flammability/explosive limit	0.5 %
Vapor pressure	3.3 mmHg at 20°C
Vapor density	5.41
Density	Not determined or not available.
Relative density	1.49 g/cm ³
Solubilities	Insoluble
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	566°C
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

Other information

Molecular Weight	157.01
-------------------------	--------

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

Ignition sources, excess heat, confined spaces.

Incompatible materials:

Strong oxidizing agents.

Hazardous decomposition products:

Oxides of carbon and hydrogen bromide.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Route	Result
Bromobenzene	inhalation	LD50 - Rat - 2380 mg/kg

Skin corrosion/irritation

Assessment: Causes skin irritation

Product data: No data available.

Substance data:

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Bromobenzene

Name	Result
Bromobenzene	Causes skin irritation.

Serious eye damage/irritation

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

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Bromobenzene

Name	Result
Bromobenzene	LC50 - Fish - 96 H - Minimum: 5.6 mg/l , Median: 5.6 mg/l Maximum: 5.6 mg/l

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.


SECTION 13: Disposal considerations

Disposal methods:


It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

SECTION 14: Transport information

United States Transportation of dangerous goods (49 CFR DOT)

UN number	UN 2514
UN proper shipping name	BROMOBENZENE
UN transport hazard class(es)	3 
Packing group	III
Environmental hazards	None
Special precautions for user	None

International Maritime Dangerous Goods (IMDG)

UN number	UN 2514
UN proper shipping name	BROMOBENZENE
UN transport hazard class(es)	3 
Packing group	III
Environmental hazards	None
Special precautions for user	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	UN 2514
UN proper shipping name	BROMOBENZENE


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Bromobenzene

UN transport hazard class(es)	3	
Packing group	III	
Environmental hazards	None	
Special precautions for user	None	

SECTION 15: Regulatory information

United States regulations

Inventory listing (TSCA):

108-86-1	Bromobenzene	Listed
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Significant New Use Rule (TSCA Section 5): Not determined.

Export notification under TSCA Section 12(b): Not determined.

SARA Section 311/312 hazards:

Acute	Chronic	Fire	Pressure	Reactive
No	No	No	No	No

SARA Section 302 extremely hazardous substances: Not determined.

SARA Section 313 toxic chemicals:

108-86-1	Bromobenzene	Not Listed
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CERCLA: Not determined.

RCRA: Not determined.

Section 112(r) of the Clean Air Act (CAA): Not determined.

Massachusetts Right to Know:

108-86-1	Bromobenzene	Listed
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New Jersey Right to Know:

108-86-1	Bromobenzene	Listed
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New York Right to Know:

108-86-1	Bromobenzene	Listed
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Pennsylvania Right to Know:

108-86-1	Bromobenzene	Listed
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California Proposition 65: None of the ingredients are listed.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 2-2-0

HMIS: 2-2-0

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Bromobenzene

End of Safety Data Sheet



Safety Data Sheet

Bromocresol Green Solution, 0.04%, alcoholic

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Bromocresol Green Solution, 0.04%, alcoholic

Synonyms/Generic Names: None

SDS Number: 110.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Flammable liquid, Target organ effect, Irritant

Target Organs: Nerves, Liver, Heart

Signal Words: Danger

Pictograms



GHS Classification:

Flammable liquids	Category 2
Skin irritation	Category 2
Eye irritation	Category 2B
Specific target organ toxicity-single exposure	Category 3

GHS Label Elements, including precautionary statements:

Hazard Statements:

H225	Highly flammable liquid and vapor.
H315+H320	Causes skin and eye irritation.
H401	Toxic to aquatic life.

Precautionary Statements:

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/face protection/eye protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Potential Health Effects

Eyes	Causes eye irritation
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed

NFPA Ratings

Health	1
Flammability	3
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	3
Reactivity	0
Personal	H

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Ethyl Alcohol	95	64-17-5	200-578-6	C ₂ H ₅ OH	46.07 g/mol
Water	Balance	7732-18-5	231-791-2	H ₂ O	18.00 g/mol
Bromocresol Green, Sodium Salt	<1	62625-32-5	263657-4	C ₂₁ H ₁₃ Br ₄ NaO ₅ S	720.00 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention if necessary.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Flammable liquid. Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Material can react violently with water (spattering and misting) and react with metals to produce flammable hydrogen gas.
Specific hazards arising from	Emits toxic fumes under fire conditions. (Carbon oxides) (See also

the chemical	Stability and Reactivity section) Vapors can travel to a source of ignition and flash back. Containers may explode in a fire. Cool containers from a distance using water spray. SENSITIVE TO STATIC DISCHARGE.
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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb spill with vermiculite or other noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Use with adequate ventilation and grounding. Wash thoroughly after using. Keep container closed when not in use. Keep away from sources of ignition. No smoking. Take measure to prevent the buildup of electrostatic charge.

Conditions for safe storage, including any incompatibilities

Store in tightly closed, original containers in a cool, dry, well ventilated area. Store between 55-100°F for product stability. Do not store with strong oxidizing agents, strong acids, peroxides, aldehydes, halogens, ammonia, acid anhydrides or alkali metals.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls: Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Ethyl Alcohol	1000 ppm 1900 mg/m ³	REL	NIOSH
	1000 ppm 1900 mg/m ³	PEL	OSHA
	1000 ppm 1880 mg/m ³	STEL	ACGIH
	3300 ppm	IDLH	OSHA

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles with face shield.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, complete body suit.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, green liquid
Odor	Mild alcohol
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	-144°C (-227.2°F) (ethyl alcohol)
Initial boiling point and boiling range	78°C (172.4°F) to 80°C (174°F) (ethyl alcohol)
Flash point	14°C (57.2°F) (ethyl alcohol)
Evaporation rate	Not Available
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limit	3.3-19%(ethyl alcohol)
Vapor pressure	(@ 20°C) 44.6 mmHg (ethyl alcohol)
Vapor density	(air=1) 1.6 (ethyl alcohol)
Relative density	Not Available
Solubility (ies)	Completely soluble in water (ethyl alcohol)
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	363°C (685.4°F) (ethyl alcohol)
Decomposition temperature	Mild alcohol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Keep away from heat, flame and sparks.
Incompatible Materials	Alkali metals, ammonia, oxidizing agents, peroxides.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION**Acute Toxicity**

Ethyl Alcohol

Skin	Not Available
Eyes	Not Available
Respiratory	LC50 Inhalation – rat – 10 h – 20000 ppm
Ingestion	LD50 Oral – rat – 7,060 mg/kg Remarks: Lungs, Thorax, or Respiration: Other changes.

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans (Ethyl Alcohol).

NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Insensitivity to pain, feel of coolness or cold, skin looks white and feels hard and cold.
Eyes	Stinging pain, watering of eyes, inflammation of eyelids and conjunctivitis.
Respiratory	Rapid irregular breathing, headache, fatigue, mental confusion, nausea and vomiting, giddiness and poor judgment, convulsions and death.
Ingestion	Breath has sweet, organic odor, metal confusion, drowsiness, nausea, vomiting and headache.

Chronic Toxicity	Ingestion may cause blindness. Repeated/prolonged skin contact may cause dryness or rashes.
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Pre-and Post-implant mortality.
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ethyl Alcohol

Aquatic Vertebrate	LC ₅₀ (96 hours): 13,000 mg/L <i>Oncorhynchus mykiss</i> (Rainbow Trout)
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Will not accumulate
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1993, Flammable liquids, n.o.s., (ethanol), 3, pg II
TDG	UN1993, FLAMMABLE LIQUIDS, N.O.S., (ETHANOL), 3, PG II
IMDG	UN1993, FLAMMABLE LIQUIDS, N.O.S., (ETHANOL), 3, PG II
Marine Pollutant	No
IATA/ICAO	UN1993, Flammable liquids, n.o.s., (ethanol), 3, pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Ethyl Alcohol (in alcoholic beverages)
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Ethyl Alcohol
SARA 312	Ethyl Alcohol
SARA 313	Listed: Ethyl Alcohol
WHMIS Canada	Class B-2: Flammable and combustible liquid- Flammable liquid Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/09/2013
Revision 2	06/21/2013

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.

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Bromoform

SECTION 1: Identification

Product identifier

Product name: Bromoform

Product code: KEMBF1001-A

Recommended use of the product and restriction on use

Relevant identified uses: Produits chimiques de laboratoire

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

Supplier:

AquaPhoenix Scientific

860 Gitts Run Road

Hanover

PA 17331

(717) 632-1291

AquaPhoenix Scientific Inc.

860 Gitts Run Road

Hanover

PA 17331

(717) 632-1291

Emergency telephone number:

United States

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazard(s) identification

GHS classification:

Acute toxicity (oral), category 4

Skin irritation, category 2

Eye irritation, category 2A

Chronic aquatic hazard, category 2

Acute toxicity (inhalation), category 3

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H331 Toxic if inhaled

H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P264 Wash skin thoroughly after handling

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P270 Do not eat, drink or smoke when using this product

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Bromoform

P271 Use only outdoors or in a well-ventilated area
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P321 Specific treatment (see supplemental first aid instructions on this label).
P301+P330+P312 IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
P362 Take off contaminated clothing and wash before reuse
P302+P352 If on skin: Wash with soap and water
P332+P313 If skin irritation occurs: Get medical advice/attention
P304+P340+P311 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
P391 Collect spillage
P403+P233 Store in a well ventilated place. Keep container tightly closed
P405 Store locked up
P501 Dispose of contents and container as instructed in Section 13

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 64-17-5	Ethyl alcohol	0.5-4
CAS number: 75-25-2	Bromoform	>95

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Not determined or not applicable.

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position
Maintain an unobstructed airway
Get medical advice/attention if you feel unwell
Move exposed individual to fresh air
Call a POISON CONTROL CENTER or seek medical attention

After skin contact:

Rinse affected area with soap and water
If symptoms develop or persist, seek medical attention
Wash affected area with soap and water
Seek medical attention if symptoms develop or persist

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes
Remove contact lenses, if present and easy to do
Continue rinsing
Get medical advice/attention

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Bromoform

Remove contact lens(es) if able to do so during rinsing
Seek medical attention if irritation persists or if concerned

After swallowing:

Rinse mouth and then drink plenty of water
Do not induce vomiting
Get medical advice/attention if you feel unwell
Call a POISON CONTROL CENTER or seek medical attention if you feel unwell

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not applicable.

Delayed symptoms and effects:

Not determined or not applicable.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not applicable.

Notes for the doctor:

Not determined or not applicable.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing
Refer to Section 8
Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

Special precautions:

Heating causes a rise in pressure, risk of bursting and combustion
Shut off sources of ignition
Carbon monoxide and carbon dioxide may form upon combustion

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation
Ensure air handling systems are operational
Wear protective eye wear, gloves and clothing

Environmental precautions:

Should not be released into the environment
Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)
Dispose of contents / container in accordance with local regulations

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Bromoform

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.

Avoid breathing mist or vapor.

Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.

Store away from foodstuffs.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
United States (OSHA)	Bromoform	75-25-2	8 hr Time Weighted Avg (TWA): 5 mg/3
	Bromoform	75-25-2	PEL : 0.5 ppm
	Ethyl alcohol	64-17-5	OSHA PEL TWA 1,000 ppm
	Ethyl alcohol	64-17-5	OSHA PEL TWA 1,900 mg/m ³
NIOSH	Bromoform	75-25-2	8 hr Time Weighted Avg (TWA): 5 mg/3
	Ethyl alcohol	64-17-5	NIOSH REL TWA 1,000 ppm
	Ethyl alcohol	64-17-5	NIOSH REL TWA 1,900 mg/m ³
ACGIH	Bromoform	75-25-2	Carcinogen Category: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans). The 8-Hour Exposure Limit (TLV-TWA): 0.5 ppm.
	Ethyl alcohol	64-17-5	ACGIH TLV TWA 1,000 ppm
	Ethyl alcohol	64-17-5	ACGIH TLV STEL 1,000 ppm

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

Select glove material impermeable and resistant to the substance.

Respiratory protection:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 07.13.2017

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Bromoform

When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

- Wash hands before breaks and at the end of work.
- Avoid contact with skin, eyes and clothing.
- Perform routine housekeeping.
- Wash contaminated clothing before reusing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear to yellow liquid
Odor	Chloroform-like
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	8 °C
Initial boiling point/range	149-151 °C
Flash point (closed cup)	Not determined or not available.
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Not determined or not available.
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	4.4 mmHg @ 20 °C
Vapor density	8.7
Density	Not determined or not available.
Relative density	2.6-2.8
Solubilities	Soluble in water : 3.1 g/l
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

None under normal conditions of use and storage.

Conditions to avoid:

None known.

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Bromoform

Incompatible materials:

None known.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Harmful if swallowed Toxic if inhaled

Product data: No data available.

Substance data:

Name	Route	Result
Bromoform	oral	LD50 - Rat - 933 mg/kg

Skin corrosion/irritation

Assessment: Causes skin irritation

Product data: No data available.

Substance data:

Name	Result
Bromoform	Causes skin irritation.

Serious eye damage/irritation

Assessment: Causes serious eye irritation

Product data: No data available.

Substance data:

Name	Result
Bromoform	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC):

Name	Classification
Ethyl alcohol	Group 1 - Carcinogenic to humans

National Toxicology Program (NTP):

Name	Classification
Bromoform	Reasonably anticipated to be human carcinogens

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 07.13.2017

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Bromoform

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
Bromoform	LC50 - Crustaceans - 46 mg/l - 48 h
	LC50 - Fish - 29 mg/l - 96 h
	EC50 - Algae - 42 mg/l - 72h or 96 h

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Disposal methods:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200



Initial preparation date: 07.13.2017

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Bromoform

SECTION 14: Transport information



United States Transportation of dangerous goods (49 CFR DOT)

UN number	UN 2515
UN proper shipping name	Bromoform
UN transport hazard class(es)	6.1  
Packing group	III
Environmental hazards	Marine Pollutant Bromoform
Special precautions for user	None
Passenger air/rail	60 L
Cargo aircraft only	220 L
Stowage category	A

International Maritime Dangerous Goods (IMDG)

UN number	UN 2515
UN proper shipping name	Bromoform
UN transport hazard class(es)	6.1  
Packing group	III
Environmental hazards	Marine Pollutant Bromoform
Special precautions for user	None
EmS number	F-A, S-A
Stowage category	Category A. Keep as cool as reasonably practicable. Clear of living quarters.
Excepted quantities	E1
Limited quantity	5 L

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	UN 2515
UN proper shipping name	Bromoform
UN transport hazard class(es)	6.1  
Packing group	III
Environmental hazards	Marine Pollutant Bromoform
Special precautions for user	None
ERG code	6L
Excepted quantities	E1
Passenger and cargo	60 L
Cargo aircraft only	220 L

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

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Bromoform

Limited quantity	2 L
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Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Bulk Name	None
Ship type	None
Pollution category	None

SECTION 15: Regulatory information

United States regulations

Inventory listing (TSCA):

75-25-2	Bromoform	Listed
64-17-5	Ethyl alcohol	Listed

Significant New Use Rule (TSCA Section 5): Not determined.

Export notification under TSCA Section 12(b): Not determined.

SARA Section 311/312 hazards:

Acute	Chronic	Fire	Pressure	Reactive
Yes	No	No	No	No

SARA Section 302 extremely hazardous substances: Not determined.

SARA Section 313 toxic chemicals:

75-25-2	Bromoform	Listed
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CERCLA:

75-25-2	Bromoform	Listed	100 lbs.
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RCRA: Not determined.

Section 112(r) of the Clean Air Act (CAA): Not determined.

Massachusetts Right to Know:

75-25-2	Bromoform	Listed
64-17-5	Ethanol Ethyl alcohol	Listed

New Jersey Right to Know:

75-25-2	Bromoform	Listed
75-25-2	Bromoform	Listed
64-17-5	Ethanol Ethyl alcohol	Not Listed

New York Right to Know:

75-25-2	Bromoform	Listed
75-25-2	Bromoform	Listed
64-17-5	Ethanol Ethyl alcohol	Listed

Pennsylvania Right to Know:

75-25-2	Bromoform	Listed
64-17-5	Ethanol Ethyl alcohol	Listed

California Proposition 65: Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 07.13.2017

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Bromoform

Disclaimer:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 2-0-0

HMIS: 2-0-0

Initial preparation date: 07.13.2017

End of Safety Data Sheet

Safety Data Sheet

Bromothymol Blue 0.04%

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Bromothymol Blue 0.04%
Recommended Use: Science education applications
Synonyms: Bromothymol Blue Solution, Bromothymol Sulfone Phthalein
Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215-3398
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

Not a dangerous substance according to GHS classification criteria. No known OSHA hazards.

GHS Classification:

Acute Toxicity Dermal Contains 100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Vapor Contains 100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains 100 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	99.96
Bromothymol Blue, Sodium Salt	34722-90-2	0.04

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact: After contact with skin, wash immediately with plenty of water.
Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7 Handling and Storage

Handling: Will temporarily discolor skin. Do not ingest or take internally.
Storage: Keep container tightly closed in a cool, well-ventilated place.

Safety Data Sheet

Storage Code: Green - general chemical storage

Section 8 Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Bromothymol Blue, Sodium Salt	N/A	N/A	N/A	N/A

Control Parameters

Engineering Measures:

No exposure limits exist for the constituents of this product. General room ventilation might be required to maintain operator comfort under normal conditions of use.

Personal Protective Equipment (PPE):

Lab coat, apron, eye wash, safety shower.

Respiratory Protection:

No respiratory protection required under normal conditions of use.

Eye Protection:

Wear chemical splash goggles when handling this product. Have an eye wash station available.

Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves:

No information available

Section 9 Physical Data

Formula: See Section 3

Molecular Weight: 648.37

Appearance: Blue Liquid

Odor: None

Odor Threshold: No data available

pH: No data available

Melting Point: No data available

Boiling Point: 100 C

Flash Point: No data available

Flammable Limits in Air: No data available

Vapor Pressure: No data available

Evaporation Rate (BuAc=1): <1

Vapor Density (Air=1): 0.7

Specific Gravity: Approx. 1.0

Solubility in Water: Soluble

Log Pow (calculated): No data available

Autoignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Percent Volatile by Volume: No data available

Section 10 Reactivity Data

Reactivity:

Not generally reactive under normal conditions.

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

Exposure to air. Keep lid tightly closed when not in use.

Incompatible Materials:

Water-reactive materials

Hazardous Polymerization:

Will not occur

Section 11 Toxicity Data

Routes of Entry: Ingestion, skin and eye contact.

Symptoms (Acute): No data available

Delayed Effects: No data available

Acute Toxicity:

Chemical Name

CAS Number

Oral LD50

Dermal LD50

Inhalation LC50

Water

7732-18-5

Not applicable

Bromothymol Blue, Sodium Salt

34722-90-2

Carcinogenicity:

Chemical Name

CAS Number

IARC

NTP

OSHA

Bromothymol Blue, Sodium Salt

34722-90-2

Not listed

Not listed

Not listed

Chronic Effects:

Mutagenicity:

No evidence of a mutagenic effect.

Teratogenicity:

No evidence of a teratogenic effect (birth defect).

Safety Data Sheet

Sensitization: No evidence of a sensitization effect.
Reproductive: No evidence of negative reproductive effects.
Target Organ Effects:
Acute: No information available
Chronic: No information available

Section 12 Ecological Data

Overview: This material is not expected to be harmful to the ecology.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: No data
Other Adverse Effects: No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available

Section 13 Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s): Not Determined

Section 14 Transport Information

Ground - DOT Proper Shipping Name: Not regulated for transport by US DOT.	Air - IATA Proper Shipping Name: Not regulated for air transport by IATA.
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Section 15 Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Bromothymol Blue, Sodium Salt	34722-90-2	No	No	No	No	No

Section 16 Additional Information

Revised: 03/27/2013

Replaces: None

Printed: 06-21-2013

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health

Section 1 Chemical Product and Company Information

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5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 952-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BROMOTHYMOLO BLUE, 0.04% AQUEOUS SOLUTION

Synonyms Bromothymol Blue, Water Solution

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified

Pictograms: Not classified

Target organs: None known

GHS Classification: Not classified

GHS Label information: Hazard statement: Not classified

Precautionary statement: Not classified

Supplementary information:

Do not breathe vapors, spray or mist. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	99.96%	231-791-2
Bromothymol blue, sodium salt	34722-90-2	0.04%	252-169-7

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: In fire conditions, water may evaporate from this solution which may cause hazardous decomposition products to be formed as dust or fume.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances. Protect from light.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Bromothymol blue	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Liquid, clear, blue-green.

Odor: No odor.

Odor threshold: Data not available.

pH: Data not available.

Melting / Freezing point: Approximately 0°C (32°F) (water)

Boiling point: Approximately 100°C (212°F) (water)

Flash point: Data not available

Evaporation rate (Water = 1): <1

Flammability (solid/gas): Data not available.

Explosion limits: Lower / Upper: Data not available

Vapor pressure (mm Hg): 14 (water)

Vapor density (Air = 1): 0.7 (water)

Relative density (Specific gravity): Approximately 1.0 (water)

Solubility(ies): Complete in water.

Partition coefficient: Data not available

Auto-ignition temperature: Data not available

Decomposition temperature: Data not available.

Viscosity: Data not available.

Molecular formula: Mixture

Molecular weight: Mixture

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation. Protect from light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, sulfur oxides and bromine gas.

Section 11 Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: May cause irritation.

Eyes: May cause irritation.

Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: Not applicable

2012 ERG Guide # Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Bromothymol blue, sodium salt	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Section 1 Chemical Product and Company Information

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5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BROMOTHYMOL BLUE, SODIUM SALT

Synonyms Bromothymol Blue, pH Indicator

Section 2 Hazards Identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: Not classified

Pictograms: Not classified

Target organs: None known

GHS Classification: Not classified

GHS Label information: Hazard statement: Not classified

Precautionary statement: Not classified

Supplementary information:

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Bromothymol blue, sodium salt	34722-90-2	100%	252-169-7

Section 4 First Aid Measures

INGESTION: MAY BE HARMFUL IF SWALLOWED. Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: MAY CAUSE EYE IRRITATION. Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: MAY CAUSE SKIN IRRITATION. Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Recover for reuse if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

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Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale dusts. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from light.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Bromothymol blue	None established	None established	None established

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If dusty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Solid. Light violet powder.	Evaporation rate (= 1): Data not available	Partition coefficient: Data not available
Odor: No odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: Data not available
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Not needed	Decomposition temperature: Data not available
pH: Data not available.	Vapor pressure (mm Hg): Negligible	Viscosity: Data not available.
Melting / Freezing point: Data not available	Vapor density (Air = 1): Data not available	Molecular formula: C ₂₇ H ₂₇ Br ₂ O ₅ SNa
Boiling point: Decomposes	Relative density (Specific gravity): Data not available	Molecular weight: 646.39
Flash point: Not flammable	Solubility(ies): Soluble in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable **Hazardous polymerization:** Will not occur.

Conditions to avoid: Excessive temperatures. Protect from light.

Incompatible materials: Strong oxidizers.

Hazardous decomposition products: Carbon oxides, sulfur oxides and bromine gas.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenicity: Data not available
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
 Inhalation: May be harmful if inhaled.
 Ingestion: May be harmful if swallowed.
 Skin: May cause irritation.
 Eyes: May cause irritation.
Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional Information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available **Bioaccumulative potential:** No data available
Mobility in soil: No data available **PBT and vPvB assessment:** No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable **Shipping name:** Not Regulated
Hazard class: Not applicable **Packing group:** Not applicable **Reportable Quantity:** No **Marine pollutant:** No
Exceptions: Not applicable **2012 ERG Guide #:** Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the inventory list.

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Bromothymol blue, sodium salt	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: October 11, 2013

Supersedes: November 23, 2013

Lab-aids

MATERIAL SAFETY DATA SHEET

ID # 81R-9

01/12/01

CHEMICAL NAME & SYNONYMS -	Brom Thymol Blue Indicator
CAS No.(s) -	7732-18-5; 0076-59-5; 1319-63-2
USED IN LAB-AIDS KITS # (s) -	81R
FORMULA -	Mixture/solution
FORMULA WEIGHT (F.W.) -	Mixture/solution
PHYSICAL DATA - (DENSITY, SOLUBILITY, ETC.)	An indicator solution. pH 6.0 yellow to 7.6 blue. A water based solution
APPEARANCE AND ODOR -	Odorless blue liquid
INCOMPATIBILITY - (MATERIALS TO AVOID)	None
DOT CLASS -	Not regulated
REACTIVITY -	Stable
CONDITIONS TO AVOID- (IF ANY)	None, except to practice prudent laboratory procedures
HEALTH HAZARDS - (IF ANY)	All characteristics of this substance may not be investigated
TOLERANCE LIMIT VALUE (TLV)- (IF ESTABLISHED)	None
FIRE HAZARDS - (IF ANY)	Non flammable, non combustible
SPILLS AND LEAKS -	Absorb with suitable material
DISPOSAL METHOD -	Place in trash
SPECIAL PRECAUTIONS - (IF ANY)	None
FIRST AID - (IF SUBSTANCE DANGEROUS)	External: Wash affected parts with plenty of water Internal: If ingested wash mouth and consult a physician For Eyes: Wash continuously for 15 min., see physician

N/A - NOT APPLICABLE

17 COLT COURT, RONKONKOMA, NY 11779

(631) 737-1133

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 141.00

Revision Date: February 6, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Bromthymol Blue Indicator Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Bromthymol blue, sodium salt	34722-90-2	$C_{27}H_{27}Br_2O_5SNa$	646.38	0.04%
Water	7732-18-5	H_2O	18.00	>99%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA Code
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Keep container tightly closed. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Will stain skin, clothing, and surfaces.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Deep blue liquid. Odorless.

Absorbance maximum: 392nm and 615nm
Biological stain.
pH indicator: 6.0 yellow to 7.6 blue.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD₅₀: N.A.
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

This Safety Data Sheet (SDS) is for guidance and is based upon information and tests believed to be reliable. Flinn Scientific, Inc. makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages relating thereto. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and CONSTITUTE NO WARRANTY. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond the control of Flinn Scientific, Inc. and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT(S).

Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: February 6, 2014



Safety Data Sheet

Issue Date: 09-Dec-2013

Revision Date: 22-Dec-2017

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Buckeye Clarion 25

Other means of identification

SDS # BE-5131

Product Code 5131

Recommended use of the chemical and restrictions on use

Recommended Use Floor Finish, Water Based.

Details of the supplier of the safety data sheet

Supplier Address

Buckeye International, Inc.
2700 Wagner Place
Maryland Heights, MO 63043 USA

Emergency Telephone Number

Company Phone Number 1-314-291-1900

Emergency Telephone (24 hr) Transportation - INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)
Medical - (International) 1-651-632-8956 (North America) 1-800-303-0441

2. HAZARDS IDENTIFICATION

Appearance White opaque solution **Physical State** Liquid **Odor** Sweet polymer scent No fragrance added

Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Other Hazards

Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
tributoxyethyl phosphate	78-51-3	<3
Coalescent	25265-77-4	<3

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes.
Inhalation	Remove to fresh air.
Ingestion	Give two large glasses of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects

Symptoms	Not determined.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Not determined.

Hazardous Combustion Products Carbon oxides. Phosphorus oxides. Nitrogen oxides (NOx).

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Use personal protective equipment as required.
Environmental Precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Pick up with mop, wet/dry vac, or absorbent material. Rinse area with clear water and allow floor to dry before allowing traffic. Dispose of in accordance with federal, state and local regulations.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wash face, hands, and any exposed skin thoroughly after handling.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed and store in a cool, dry and well-ventilated place. Do not store above 110°F. Store at room temperature. Protect from freezing.
Incompatible Materials	Acids. Strong alkalis. Heavy metal salts.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies
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Appropriate engineering controls

Engineering Controls	Ensure adequate ventilation, especially in confined areas. Showers. Eyewash stations.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Refer to 29 CFR 1910.133 for eye and face protection regulations. Wear safety glasses or goggles to protect against exposure.
Skin and Body Protection	Refer to 29 CFR 1910.138 for appropriate skin and body protection. Wear rubber gloves or other impervious gloves.
Respiratory Protection	Refer to 29 CFR 1910.134 for respiratory protection requirements. No protective equipment is needed under normal use conditions.

General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling.
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9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical State	Liquid	Odor	Sweet polymer scent No fragrance added
Appearance	White opaque solution	Odor Threshold	Not determined
Color	White		
Property	Values	Remarks • Method	
pH	8.6 +/- 0.4 (Conc. & Use Dilution)		
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	100 °C / 212 °F		

Flash Point	None	Tag Closed Cup
Evaporation Rate	1.0	
Flammability (Solid, Gas)	Liquid- Not Applicable	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	1.03	
Water Solubility	Miscible in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	
Additional Information	% Volatile by weight 75	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Acids. Strong alkalis. Heavy metal salts.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NO_x). Phosphorous oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Avoid breathing vapors or mists.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
tributoxyethyl phosphate 78-51-3	= 3000 mg/kg (Rat)	> 16 mL/kg (Rabbit)	> 6.4 mg/L (Rat) 4 h

Coalescent 25265-77-4	= 3200 mg/kg (Rat)	> 15200 mg/kg (Rat)	-
nonylphenol ethoxylate 9016-45-9	= 2590 mg/kg (Rat) = 1310 mg/kg (Rat)	= 1780 µL/kg (Rabbit) = 2 mL/kg (Rabbit)	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
tributoxyethyl phosphate 78-51-3		10.4 - 12.0: 96 h Pimephales promelas mg/L LC50 flow-through		
Coalescent 25265-77-4	18.4: 72 h Pseudokirchneriella subcapitata mg/L EC50	30: 96 h Pimephales promelas mg/L LC50		95: 96 h Daphnia magna mg/L LC50

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
tributoxyethyl phosphate 78-51-3	3.65 - 4.78
Coalescent 25265-77-4	3.47

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
DOT	Not regulated
IATA	Not regulated
IMDG	Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
tributoxyethyl phosphate	Present	X		Present		Present	X	Present	X	X
Coalescent	Present	X		Present		Present	X	Present	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

0

0

0

Not determined

HMIS**Health Hazards****Flammability****Physical Hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date: 09-Dec-2013
Revision Date: 22-Dec-2017
Revision Note: Telephone number update

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Safety Data Sheet

Issue Date: 27-Dec-2011

Revision Date: 22-Dec-2017

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Buckeye Ripsaw

Other means of identification

SDS # BE-5025

Product Code 5025

UN/ID No UN1760

Recommended use of the chemical and restrictions on use

Recommended Use Floor finish stripper, water based.

Details of the supplier of the safety data sheet

Supplier Address

Buckeye International, Inc.
2700 Wagner Place
Maryland Heights, MO 63043 USA

Emergency Telephone Number

Company Phone Number 1-314-291-1900

Emergency Telephone (24 hr)

Transportation - INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)
Medical - (International) 1-651-632-8956 (North America) 1-800-303-0441

2. HAZARDS IDENTIFICATION

Appearance Water clear liquid **Physical State** Liquid **Odor** Mild No fragrance added

Classification

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage

**Precautionary Statements - Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a poison center or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a poison center or doctor/physician
 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	>56.9
Benzyl alcohol	100-51-6	<15.0
Ethylene glycol monophenyl ether	122-99-6	<10.0
Ethanolamine	141-43-5	5
Octanoic Acid	124-07-2	<5.0
Sodium xylenesulfonate	1300-72-7	<4.0
Sodium metasilicate	6834-92-0	2
Sodium hydroxide	1310-73-2	1.1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures**Eye Contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if irritation develops or persists.

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
Ingestion	Drink 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects

Symptoms	May cause redness, pain, and severe skin burns. Nausea. Headache. May cause skin irritation and defatting of skin with repeated/prolonged contact. Eye contact may cause redness or burning sensation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically. Dermatitis or other pre-existing skin conditions may be aggravated by overexposure to this product.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Toxic products of combustion.

Hazardous Combustion Products Oxides of sulfur. Carbon oxides. Nitrogen oxides (NOx). Silicon oxides.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions	Use personal protective equipment as required.
Environmental Precautions	See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Pick up with mop, wet/dry vac, or absorbent material. Rinse area with clear water and allow floor to dry before allowing traffic.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling	Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands, and any exposed skin thoroughly after handling. Use personal protection recommended in Section 8. Keep out of the reach of children.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store at room temperature. Store away from incompatible materials. Store on low shelves.
Incompatible Materials	Chlorine bleach. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethanolamine 141-43-5	STEL: 6 ppm TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m ³ (vacated) TWA: 3 ppm (vacated) TWA: 8 mg/m ³ (vacated) STEL: 6 ppm (vacated) STEL: 15 mg/m ³	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 15 mg/m ³
Sodium metasilicate 6834-92-0	2 mg/m ³	2 mg/m ³	-
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Risk of contact: Wear approved safety goggles.
Skin and Body Protection	Rubber gloves or other impervious gloves. Normal work clothing (long sleeved shirts and long pants) is recommended. Wear water or chemical resistant footwear when scrubbing floors.
Respiratory Protection	No protection is ordinarily required under normal conditions of use and with adequate ventilation.

General Hygiene Considerations Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical State	Liquid	Odor	Mild No fragrance added
Appearance	Water clear liquid	Odor Threshold	Not determined
Color	Water clear		
Property	Values	Remarks • Method	
pH	12.6±0.3	1:4 dilution with DI water	12.3±0.2
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	100 °C / 212 °F		
Flash Point	None		
Evaporation Rate	1.0	(Water = 1)	
Flammability (Solid, Gas)	n/a-liquid		
Upper Flammability Limits	Not applicable		
Lower Flammability Limit	Not applicable		
Vapor Pressure	Not determined		
Vapor Density	Not determined		
Specific Gravity	1.06		
Water Solubility	Infinite		

Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Contact with incompatible materials.

Incompatible Materials

Chlorine bleach. Acids.

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Inhalation Avoid breathing vapors or mists.

Ingestion May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Benzyl alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
Ethylene glycol monophenyl ether 122-99-6	= 1260 mg/kg (Rat)	= 5 mL/kg (Rabbit) = 14422 mg/kg (Rat)	-
Ethanolamine 141-43-5	= 1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1025 mg/kg (Rabbit)	-
Octanoic Acid 124-07-2	= 10080 mg/kg (Rat)	> 5 g/kg (Rabbit)	-
Sodium xylenesulfonate 1300-72-7	= 7200 mg/kg (Rat)	-	-
Sodium metasilicate 6834-92-0	= 600 mg/kg (Rat)	-	-
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzyl alcohol 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	460: 96 h Pimephales promelas mg/L LC50 static 10: 96 h Lepomis macrochirus mg/L LC50 static	EC50 = 50 mg/L 5 min EC50 = 63.7 mg/L 15 min EC50 = 63.7 mg/L 5 min EC50 = 71.4 mg/L 30 min	23: 48 h water flea mg/L EC50
Ethylene glycol monophenyl ether 122-99-6	500: 72 h Desmodemus subspicatus mg/L EC50	337 - 352: 96 h Pimephales promelas mg/L LC50 flow-through 366: 96 h Pimephales promelas mg/L LC50 static 220 - 460: 96 h Leuciscus idus mg/L LC50 static	EC50 = 32.4 mg/L 5 min EC50 = 880 mg/L 17 h	500: 48 h Daphnia magna mg/L EC50
Ethanolamine 141-43-5	15: 72 h Desmodemus subspicatus mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	EC50 = 110 mg/L 17 h EC50 = 12200 mg/L 2 h EC50 = 13.7 mg/L 30 min	65: 48 h Daphnia magna mg/L EC50
Octanoic Acid 124-07-2		310: 96 h Oryzias latipes mg/L LC50 semi-static 110: 96 h Brachydanio rerio mg/L LC50 semi-static		170: 24 h Daphnia magna mg/L EC50
Sodium metasilicate 6834-92-0		210: 96 h Brachydanio rerio mg/L LC50 semi-static 210: 96 h Brachydanio rerio mg/L LC50		216: 96 h Daphnia magna mg/L EC50
Sodium hydroxide 1310-73-2		45.4: 96 h Oncorhynchus mykiss mg/L LC50 static		

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Benzyl alcohol 100-51-6	1.1

Ethylene glycol monophenyl ether 122-99-6	1.13
Ethanolamine 141-43-5	-1.91
Octanoic Acid 124-07-2	2.92

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods**

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste

Chemical Name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive

14. TRANSPORT INFORMATION**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s. (Ethanolamine, Sodium hydroxide)
Hazard Class	8
Packing Group	II

IATA

UN/ID No	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s. (Ethanolamine, Sodium hydroxide)
Hazard Class	8
Packing Group	II

IMDG

UN/ID No	UN1760
Proper Shipping Name	Corrosive liquid, n.o.s. (Ethanolamine, Sodium hydroxide)
Hazard Class	8
Packing Group	II

15. REGULATORY INFORMATION**International Inventories**

Not determined

US Federal Regulations**CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium hydroxide 1310-73-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ethylene glycol monophenyl ether - 122-99-6	122-99-6	<10.0	1.0

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hydroxide 1310-73-2 (1.1)	1000 lb			X

US State Regulations**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Benzyl alcohol 100-51-6		X	X
Ethylene glycol monophenyl ether 122-99-6	X		X
Ethanolamine 141-43-5	X	X	X
Sodium hydroxide 1310-73-2	X	X	X

16. OTHER INFORMATION**NFPA****Health Hazards**

3

Flammability

0

Instability

0

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical Hazards

Not determined

Personal Protection

Not determined

Issue Date:

27-Dec-2011

Revision Date:

22-Dec-2017

Revision Note:

Telephone number update

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Safety Data Sheet

Issue Date: 27-Dec-2011

Revision Date: 22-Dec-2017

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Buckeye Workout

Other means of identification

SDS # BE-5007

Product Code 5007

Recommended use of the chemical and restrictions on use

Recommended Use Spray and Wipe Ready to Use Cleaner, Water Based.

Details of the supplier of the safety data sheet

Supplier Address

Buckeye International, Inc.
2700 Wagner Place
Maryland Heights, MO 63043 USA

Emergency Telephone Number

Company Phone Number 1-314-291-1900

Emergency Telephone (24 hr)

Transportation - INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)
Medical - (International) 1-651-632-8956 (North America) 1-800-303-0441

2. HAZARDS IDENTIFICATION

Appearance Lime green solution

Physical State Liquid

Odor Floral

Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	>91
Propylene Glycol Phenyl Ether	770-35-4	<5
Alkylbenzenesulfonic Acid	68584-22-5	<2
Monoethanolamine	141-43-5	<1
EDTA	60-00-4	<1
Sodium hydroxide	1310-73-2	<1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation develops or persists seek medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Inhalation	Remove to fresh air.
Ingestion	Drink 2-3 large glasses of water. Do not induce vomiting. Call a physician. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms	Eye contact may cause redness or burning sensation. Can cause defatting of skin tissue.
-----------------	-----------------------------------------------------------------------------------------

Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
---------------------------	------------------------

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Combustion products may be toxic.

Hazardous Combustion Products Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Use personal protective equipment as required.
Environmental Precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up	Pick up with mop, wet/dry vac, or absorbent material. Rinse area with clear water and allow floor to dry before allowing traffic.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep container closed when not in use. Store at room temperature.

Incompatible Materials Chlorine bleach. May damage some plastics.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Monoethanolamine 141-43-5	STEL: 6 ppm TWA: 3 ppm	TWA: 3 ppm TWA: 6 mg/m ³ (vacated) TWA: 3 ppm (vacated) TWA: 8 mg/m ³ (vacated) STEL: 6 ppm (vacated) STEL: 15 mg/m ³	IDLH: 30 ppm TWA: 3 ppm TWA: 8 mg/m ³ STEL: 6 ppm STEL: 15 mg/m ³
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Risk of contact: Wear approved safety goggles.

Skin and Body Protection Rubber gloves. Suitable protective clothing.

Respiratory Protection Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Floral
Appearance	Lime green solution	Odor Threshold	Not determined
Color	Lime green		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	10.6-11.0 (conc. and use dilution)	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	100 °C / 212 °F	
Flash Point	None	Tag Closed Cup
Evaporation Rate	1.0	(Water = 1)
Flammability (Solid, Gas)	Liquid-Not Applicable	
Upper Flammability Limits	Not Applicable	
Lower Flammability Limit	Not Applicable	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	1.00	
Water Solubility	Infinite	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Keep separated from incompatible substances. Keep out of reach of children.

Incompatible Materials

Chlorine bleach. May damage some plastics.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Avoid breathing vapors or mists.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene Glycol Phenyl Ether 770-35-4	= 2830 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
Alkylbenzenesulfonic Acid 68584-22-5	= 530 mg/kg (Rat)	= 530 mg/kg (Rat)	-
Monoethanolamine 141-43-5	= 1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1025 mg/kg (Rabbit)	-
EDTA 60-00-4	= 1700 mg/kg (Rat)	-	-
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on physical, chemical and toxicological effects**Symptoms**

Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Carcinogenicity**

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Alkylbenzenesulfonic Acid 68584-22-5		3: 96 h Oncorhynchus mykiss mg/L LC50 static		2.9: 48 h Daphnia magna mg/L EC50
Monoethanolamine 141-43-5	15: 72 h Desmodesmus subspicatus mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		65: 48 h Daphnia magna mg/L EC50
EDTA 60-00-4	1.01: 72 h Desmodesmus subspicatus mg/L EC50	34 - 62: 96 h Lepomis macrochirus mg/L LC50 static 44.2 - 76.5: 96 h Pimephales promelas mg/L LC50 static		113: 48 h Daphnia magna mg/L EC50 Static
Sodium hydroxide 1310-73-2		45.4: 96 h Oncorhynchus mykiss mg/L LC50 static		

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Alkylbenzenesulfonic Acid 68584-22-5	2
Monoethanolamine 141-43-5	-1.91

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods**

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Chemical Name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive

14. TRANSPORT INFORMATION

<u>Note</u>	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
<u>DOT</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

15. REGULATORY INFORMATION**International Inventories**

TSCA	Listed
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Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory***US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
EDTA 60-00-4	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Sodium hydroxide 1310-73-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
EDTA 60-00-4 (<1)	5000 lb			X
Sodium hydroxide 1310-73-2 (<1)	1000 lb			X

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Monoethanolamine 141-43-5	X	X	X
EDTA 60-00-4	X	X	X
Sodium hydroxide 1310-73-2	X	X	X

16. OTHER INFORMATION**NFPA****Health Hazards**

1

Flammability

0

Instability

0

Special Hazards

Not determined

HMIS**Health Hazards**

Not determined

Flammability

Not determined

Physical Hazards

Not determined

Personal Protection

Not determined

Issue Date:

27-Dec-2011

Revision Date:

22-Dec-2017

Revision Note:

Telephone number update

Disclaimer

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End of Safety Data Sheet

Safety Data Sheet

Buffer Solution pH 10

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Buffer Solution pH 10
Recommended Use: Science education applications
Synonyms: None known
Distributor: Carolina Biological Supply Company
2700 York Road, Burlington, NC 27215
1-800-227-1150
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

DANGER



May damage fertility or the unborn child.

GHS Classification:
Reproductive Toxicity Category 1B

Other Safety Precautions: IF exposed or concerned: Get medical advice/attention.

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	99.08
Potassium Chloride	7447-40-7	0.4
Boric Acid	10043-35-3	0.33
Sodium Hydroxide	1310-73-2	0.19

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact: After contact with skin, wash immediately with plenty of water.
Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products: Boron Compounds, Sodium Oxides

Section 6 Spill or Leak Procedures

Safety Data Sheet

Steps to Take in Case Material Is Released or Spilled:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.
Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7 Handling and Storage

Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid contact with skin and eyes.
Storage: Store locked up. Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Green - general chemical storage

Section 8 Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Potassium Chloride	N/A	N/A	N/A	N/A
Boric Acid	2 mg/m3 TWA (inhalable fraction, listed under Borate compounds, inorganic)	6 mg/m3 STEL (inhalable fraction, listed under Borate compounds, inorganic)	N/A	N/A
Sodium Hydroxide	N/A	N/A	2 mg/m3 TWA	N/A

Control Parameters

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.
Personal Protective Equipment (PPE): Lab coat, apron, eye wash, safety shower.
Respiratory Protection: No respiratory protection required under normal conditions of use.
Respirator Type(s): None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.
Eye Protection: Wear chemical splash goggles when handling this product. Have an eye wash station available.
Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves: No information available

Section 9 Physical Data

Formula: See Section 3
Molecular Weight: No data available
Appearance: Blue Colorless Depends upon product selection. The color additives do not affect product hazards. Liquid
Odor: None
Odor Threshold: No data available
pH: 10
Melting Point: Estimated 0 C
Boiling Point: 100 C
Flash Point: No data available
Flammable Limits in Air: No data available

Vapor Pressure: No data available
Evaporation Rate (BuAc=1): No data available
Vapor Density (Air=1): No data available

Specific Gravity: Approx. 1
Solubility in Water: Soluble
Log Pow (calculated): No data available
Autoignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: 10
Percent Volatile by Volume: No data available

Section 10 Reactivity Data

Reactivity: Not generally reactive under normal conditions.
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: None known.
Incompatible Materials: Water-reactive materials, Acids

Safety Data Sheet

Hazardous Decomposition Products: Sodium Oxides, Boron Compounds
Hazardous Polymerization: Will not occur

Section 11 Toxicity Data

Routes of Entry: Ingestion, skin and eye contact.
Symptoms (Acute): No data available
Delayed Effects: No data available

Acute Toxicity:	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Chemical Name Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		
Potassium Chloride	7447-40-7	Oral LD50 Rat 2600 mg/kg Oral LD50 Mouse 1500 mg/kg		
Boric Acid	10043-35-3	Oral LD50 Rat 2660 mg/kg		

Carcinogenicity:	CAS Number	IARC	NTP	OSHA
Chemical Name Potassium Chloride	7447-40-7	Not listed	Not listed	Not listed
Boric Acid	10043-35-3	Listed	Not listed	Not listed
Sodium Hydroxide	1310-73-2	Not listed	Not listed	Not listed

Chronic Effects:
Mutagenicity: No evidence of a mutagenic effect.
Teratogenicity: Evidence of a teratogenic effect (birth defect).
Sensitization: No evidence of a sensitization effect.
Reproductive: Evidence of negative reproductive effects.
Target Organ Effects:
Acute: Cardiovascular system, Toxic effects are amplified in infants.
Chronic: Reproductive systems

Section 12 Ecological Data

Overview: This material is not expected to be harmful to the ecology.
Mobility: This material is expected to have high mobility in soil. It absorbs weakly to most soil types.
Persistence: Dissolved into water
Bioaccumulation: No data
Degradability: No data
Other Adverse Effects: No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Potassium Chloride	7447-40-7	Aquatic LC50 (96h) Bluegill Sunfish 1060 MG/L Aquatic EC50 (48h) Daphnia 825 MG/L 72 HR EC50 DESMODESMUS SUBSPICATUS 2500 MG/L
Boric Acid	10043-35-3	48 HR EC50 DAPHNIA MAGNA 115 - 153 MG/L
Sodium Hydroxide	1310-73-2	Aquatic LC50 (96h) Rainbow Trout 45.4 MG/L

Section 13 Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s): Not Determined

Section 14 Transport Information

Safety Data Sheet

Ground - DOT Proper Shipping Name:
Not regulated for transport by US DOT.

Air - IATA Proper Shipping Name:
Not regulated for air transport by IATA.

Section 15 Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Potassium Chloride	7447-40-7	No	No	No	No	No
Boric Acid	10043-35-3	No	No	No	No	No
Sodium Hydroxide	1310-73-2	No	1000 lb RQ	1000lb (454kg) final RQ	No	No

Section 16 Additional Information

Revised: 09/03/2014

Replaces: 09/03/2014

Printed: 09-11-2014

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BUFFER SOLUTION PH10

Synonyms Buffer, Aqueous Solution

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label information: Hazard statement(s):
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):

P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Water	7732-18-5	99.08%	231-791-2
Potassium chloride	7447-40-7	0.40%	231-211-8
Boric acid	10043-35-3	0.33%	233-139-2
Sodium hydroxide	1310-73-2	0.19%	215-185-5
FD&C blue #1 (C.I. No. 42090)	3844-45-9	trace	223-339-8

Section 4 First Aid

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Spill Response

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Potassium chloride	None established.	None established.	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, blue liquid.	Evaporation rate (Water = 1): <1	Partition coefficient: Data not available
Odor: No odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: Data not available
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available.
pH: 10.0	Vapor pressure (mm Hg): 14 (water)	Viscosity: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)	Vapor density (Air = 1): 0.7 (water)	Molecular formula: Mixture
Boiling point: Approximately 100°C (212°F) (water)	Relative density (Specific gravity): Approximately 1.0 (water)	Molecular weight: Mixture
Flash point: Data not available	Solubility(ies): Complete in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Acids, alkalis, and air will change the buffer's ability.

Hazardous decomposition products: Boron oxide and chlorine gas.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenicity: Data not available
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
 Inhalation: May be harmful if inhaled.
 Ingestion: May be harmful if swallowed.
 Skin: May cause mild irritation.
 Eyes: May cause mild irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: Data not available

Section 12 Ecotoxicological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available
Mobility in soil: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Bioaccumulative potential: No data available
PBT and vPvB assessment: No data available

Section 13 Disposal Consideration

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Information on the Label

UN/NA number: Not applicable
Hazard class: Not applicable
Exceptions: Not applicable
Shipping name: Not Regulated
Packing group: Not applicable
2012 ERG Guide # Not applicable
Reportable Quantity: No
Marine pollutant: No

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Potassium chloride	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Other Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: September 23, 2013

Supersedes: November 23, 2011

Section 1 Chemical Product and Company Information

5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BUFFER SOLUTION PH4

Synonyms Buffer, Aqueous Solution

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label information: Hazard statement(s):
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):

P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Nommé Chimique	# CAS	%	EINECS
Water	7732-18-5	98.52%	231-791-2
Acetic acid, glacial	64-19-7	0.99%	231-913-4
Sodium acetate	127-09-3	0.49%	215-185-5

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Acetic acid	TWA: 10 ppm ; 25 mg/m ³	TWA: 10 ppm ; 25 mg/m ³	TWA: 10 ppm ; 25 mg/m ³

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.	Evaporation rate (Water = 1): <1	Partition coefficient: Data not available
Odor: Vinegar-like odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: Data not available
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available.
pH: 4.0	Vapor pressure (mm Hg): 14 (water)	Viscosity: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)	Vapor density (Air = 1): 0.7 (water)	Molecular formula: Mixture
Boiling point: Approximately 100°C (212°F) (water)	Relative density (Specific gravity): Approximately 1.0 (water)	Molecular weight: Mixture
Flash point: Data not available	Solubility(ies): Complete in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable **Hazardous polymerization:** Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.
Incompatibilities with other materials: Oxidizing agents, such as hydrogen peroxide, nitric acid, perchloric acid or chromium trioxide. Strong alkalies such as sodium hydroxide.
Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Acute toxicity: Data not available
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenicity: Data not available
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
 Inhalation: May be harmful if inhaled.
 Ingestion: May be harmful if swallowed.
 Skin: May cause mild irritation.
 Eyes: May cause mild irritation.
Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.
Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability: No data available **Bioaccumulative potential:** No data available
Mobility in soil: No data available **PBT and vPvB assessment:** No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable **Shipping name:** Not Regulated
Hazard class: Not applicable **Packing group:** Not applicable **Reportable Quantity:** No **Marine pollutant:** No
Exceptions: Not applicable **2012 ERG Guide #:** Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Acetic acid	Listed	5,000 lbs (2,270 kg)	D001 ; D002	Listed	Not listed	D2B
Sodium acetate	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

SDS No.: BBR404

6319

SAFETY DATA SHEET

SB49247X
SB49246

SB49247
GENERAL STORAGE CODE GREEN

Section 1 Chemical Product and Company Information



901 Janesville Ave
P.O. Box 861
Fort Atkinson, WI 53538-0901

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BUFFER SOLUTION, PH4 (RED COLOR CODED)

Synonyms: Standard Buffer Solution, pH 4.00

Section 2 Hazards Identification

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label information: Hazard statement(s):
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):

P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Section 3 Composition / Information on Ingredients

Chemical Name	# CAS	%	EINECS
Water	7732-18-5	98.52%	231-791-2
Acetic acid, glacial	64-19-7	0.99%	231-913-4
Sodium acetate	127-09-3	0.49%	215-185-5
FD&C Red #40 (C.I.No. 16035)	25956-17-6	Trace	247-358-0

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Section 6 Accidental Release Measures

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use with adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Acetic acid	TWA: 10 ppm ; 25 mg/m ³	TWA: 10 ppm ; 25 mg/m ³	TWA: 10 ppm ; 25 mg/m ³

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Appearance: Clear, red liquid.	Evaporation rate (Water = 1): <1	Partition coefficient: Data not available
Odor: Vinegar-like odor.	Flammability (solid/gas): Data not available	Auto-ignition temperature: Data not available
Odor threshold: Data not available.	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available
pH: 4.0	Vapor pressure (mm Hg): 14 (water)	Viscosity: Data not available.
Melting / Freezing point: Approximately 0°C (32°F) (water)	Vapor density (Air = 1): 0.7 (water)	Molecular formula: Mixture
Boiling point: Approximately 100°C (212°F) (water)	Relative density (Specific gravity): Approximately 1.0 (water)	Molecular weight: Mixture
Flash point: Data not available	Solubility(ies): Complete in water.	

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Oxidizing agents, such as hydrogen peroxide, nitric acid, perchloric acid or chromium trioxide. Strong alkalis such as sodium hydroxide.

Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: May cause mild irritation.

Eyes: May cause mild irritation.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: Not applicable

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: Not applicable

2012 ERG Guide #: Not applicable

Section 15 Regulatory Information

A chemical is considered to be listed if the CAS number for the anhydrous form is on the inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Acetic acid	Listed	5,000 lbs (2,270 kg)	D001 ; D002	Listed	Not listed	D08
Sodium acetate	Listed	Not listed	Not listed	Listed	Not listed	Uncontrolled product

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.

Revision Date: September 17, 2014

Supersedes: September 23, 2013

Safety Data Sheet

Buffer Solution pH 7



Section 1 Product Description

Product Name: Buffer Solution pH 7
Recommended Use: Science education applications
Synonyms: None known
Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215-3398
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

Not a dangerous substance according to GHS classification criteria. No known OSHA hazards.

GHS Classification:

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	99.2
Potassium Dihydrogen Phosphate	7778-77-0	0.7
Sodium Hydroxide	1310-73-2	0.1

Section 4 First Aid Measures

Emergency and First Aid Procedures

Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact: After contact with skin, wash immediately with plenty of water.
Ingestion: If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Section 5 Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products: Phosphorus compounds, Potassium Oxide, Sodium Oxides

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: No health affects expected from the clean-up of this material if contact can be avoided. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7 Handling and Storage

Handling: Avoid contact with skin and eyes.
Storage: Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Green - general chemical storage

Section 8 Protection Information

Safety Data Sheet

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Sodium Phosphate, Monobasic	N/A	N/A	N/A	N/A
Sodium Hydroxide	N/A	N/A	2 mg/m3 TWA	N/A

Control Parameters

Engineering Measures:	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.
Personal Protective Equipment (PPE):	Lab coat, apron, eye wash, safety shower.
Respiratory Protection:	No respiratory protection required under normal conditions of use.
Respirator Type(s):	None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.
Eye Protection:	Wear chemical splash goggles when handling this product. Have an eye wash station available.
Skin Protection:	Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	No information available

Section 9 Physical Data

Formula: See Section 3 Molecular Weight: No data available Appearance: Colorless Yellow Depends upon product selection. The color additives do not affect product hazards. Liquid Odor: None Odor Threshold: No data available pH: 7 Melting Point: Estimated 0 C Boiling Point: 100 C Flash Point: No data available Flammable Limits in Air: No data available	Vapor Pressure: No data available Evaporation Rate (BuAc=1): No data available Vapor Density (Air=1): No data available Specific Gravity: Approx. 1 Solubility in Water: Soluble Log Pow (calculated): No data available Autoignition Temperature: No data available Decomposition Temperature: No data available Viscosity: No data available Percent Volatile by Volume: No data available
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Section 10 Reactivity Data

Reactivity:	Not generally reactive under normal conditions.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	None known.
Incompatible Materials:	Water-reactive materials
Hazardous Decomposition Products:	Sodium Oxides, Potassium Oxide, Phosphorus compounds
Hazardous Polymerization:	Will not occur

Section 11 Toxicity Data

Routes of Entry	Ingestion, skin and eye contact.
Symptoms (Acute):	No data available
Delayed Effects:	No data available

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Oral LD50 Rat 90 g/kg		
Potassium Phosphate, Monobasic	7778-77-0	Oral LD50 Rat 3200 mg/kg	Dermal LD50 Rabbit > 4640 mg/kg	
Sodium Hydroxide	1310-73-2		Dermal LD50 Rabbit 1350 mg/kg	

Safety Data Sheet

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
Potassium Phosphate, Monobasic	7778-77-0	Not listed	Not listed	Not listed
Sodium Hydroxide	1310-73-2	Not listed	Not listed	Not listed

Chronic Effects:

Mutagenicity:	No evidence of a mutagenic effect.
Teratogenicity:	No evidence of a teratogenic effect (birth defect).
Sensitization:	No evidence of a sensitization effect.
Reproductive:	No evidence of negative reproductive effects.
Target Organ Effects:	
Acute:	Respiratory system, Cardiovascular system, Musculoskeletal system
Chronic:	No information available

Section 12 Ecological Data

Overview:	This material is not expected to be harmful to the ecology.
Mobility:	This material is expected to have high mobility in soil. It absorbs weakly to most soil types.
Persistence:	Dissolved into water
Bioaccumulation:	Bioconcentration is not expected to occur.
Degradability:	No data
Other Adverse Effects:	No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Potassium Phosphate, Monobasic	7778-77-0	
Sodium Hydroxide	1310-73-2	Aquatic LC50 (96h) Rainbow Trout 45.4 MG/L

Section 13 Disposal Information

Disposal Methods:	Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.
Waste Disposal Code(s):	Not Determined

Section 14 Transport Information

Ground - DOT Proper Shipping Name: Not regulated for transport by US DOT.	Air - IATA Proper Shipping Name: Not regulated for air transport by IATA.
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Section 15 Regulatory Information

TSCA Status:	All components in this product are on the TSCA Inventory.					
Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Potassium Phosphate, Monobasic	7778-77-0	No	No	No	No	No
Sodium Hydroxide	1310-73-2	No	1000 lb RQ	1000lb (454kg) final RQ	No	No

Section 16 Additional Information

Revised: 05/10/2013 Replaces: None Printed: 06-21-2013

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
		PEL	Permissible Exposure Limit

Safety Data Sheet

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	ppm	Parts per million
DOT	U.S. Department of Transportation	RCRA	Resource Conservation and Recovery Act
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
N/A	Not Available	TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health



5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

Boreal Science
399 Vansickle Road
St. Catharines, Ontario
L2S 3T4 Canada
Tel: (905) 387-9393

CHEMTREC 24 Hour Emergency
Phone Number (800) 424-9300
For laboratory use only.
Not for drug, food or household use.

Product BUFFER SOLUTION PH8
Synonyms Buffer, Aqueous Solution

This substance or mixture has not been classified at this time according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

Signal word: WARNING
Pictograms: None required
Target organs: None known

GHS Classification:
Skin irritation (Category 3)
Eye irritation (Category 2B)

GHS Label information: Hazard statement(s):
H316: Causes mild skin irritation.
H320: Causes eye irritation.

Precautionary statement(s):

P264: Wash hands thoroughly after handling.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313: If skin irritation occurs: Get medical attention.
P337+P313: If eye irritation persists: Get medical attention.

Ca Prop 65 - This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	99.09%	231-791-2
Potassium phosphate, monobasic	7778-77-0	0.72%	231-913-4
Sodium hydroxide	1310-73-2	0.19%	215-185-5

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN ABSORPTION: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Suitable Extinguishing Media: Use any media suitable for extinguishing supporting fire

Protective Actions for Fire-fighters: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. Use water spray to keep fire-exposed containers cool.

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Personal Precautions: Evacuate personnel to safe area. Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation.

Environmental Precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Containment and Cleanup: Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Precautions for Safe Handling: Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes, skin and clothing. Do not inhale vapors, spray or mist. Use adequate ventilation. Avoid ingestion. Wash thoroughly after handling. Remove and wash clothing before reuse.

Conditions for Safe Storage: Store in a cool, well-ventilated area away from incompatible substances.

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Potassium phosphate	None established.	None established.	None established.

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: None should be needed in normal laboratory handling at room temperatures. If misty conditions prevail, work in fume hood or wear a NIOSH/MSHA-approved respirator.

Appearance: Clear, colorless liquid. Odor: No odor. Odor threshold: Data not available. pH: 8.0 Melting / Freezing point: Approximately 0°C (32°F) (water) Boiling point: Approximately 100°C (212°F) (water) Flash point: Data not available	Evaporation rate (Water = 1): <1 Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): 14 (water) Vapor density (Air = 1): 0.7 (water) Relative density (Specific gravity): Approximately 1.0 (water) Solubility(ies): Complete in water.	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: Mixture Molecular weight: Mixture
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Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures which cause evaporation.

Incompatibilities with other materials: Acids, alkalis, and air will change the buffer's ability.

Hazardous decomposition products: Thermal decomposition will yield phosphates and sodium oxide and/or hydroxides.

Acute toxicity: Oral-rat LD50: 3,200 mg/kg [Potassium phosphate]

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: May cause mild irritation.

Eyes: May cause mild irritation.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: TC661500 [Potassium phosphate]

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

UN/NA number: Not applicable

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: Not applicable

2012 ERG Guide #: Not applicable

A chemical is considered to be listed if the CAS number for the anhydrous form is on the Inventory list.

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL
Potassium phosphate	Listed	Not listed	Not listed	Listed	Not listed
Sodium hydroxide	Listed	1,000 lbs (454 kg)	D002	Listed	Not listed

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. NTP: National Toxicology Program, IARC: International Agency for Research on Cancer, OSHA: Occupational Safety and Health Administration, STOT: Specific Target Organ Toxicity, SE: Single Exposure, RE: Repeated Exposure, ERG: Emergency Response Guidebook.



Fisher Scientific

SAFETY DATA SHEET

Creation Date 09-Dec-2009

Revision Date 09-Apr-2014

Revision Number 1

Product Name Buffer Solution, pH 10.00 (Certified)
Cat No. : SB116-1; SB116-10; SB116-20; SB116-500
Synonyms None
Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet

Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887
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Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements

None required.

Hazards not otherwise classified (HNOC)

None identified

Unknown Acute Toxicity

1.4 % of the mixture consists of ingredients of unknown toxicity.

Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	97.5

Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	1.0
Potassium carbonate	584-08-7	0.6
Potassium hydroxide	1310-58-3	0.5
Potassium Borate	12228-88-5	0.4

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects No information available

Notes to Physician Treat symptomatically.

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

Unsuitable Extinguishing Media No information available.

Flash Point Method - No information available.
No information available

Autoignition Temperature No information available.

Explosion Limits

Upper No data available
Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
None known.

Hazardous Combustion Products None known.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

NFPA

Health 1	Flammability 0	Instability 0	Physical hazards N/A
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Personal Precautions Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental Precautions Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Handling Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium hydroxide	Ceiling: 2 mg/m ³	(Vacated) Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWA/CEV
Potassium hydroxide	Ceiling: 2 mg/m ³		CEV: 2 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eyeface Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Physical State	Liquid
Appearance	Colorless
Odor	Odorless
Odor Threshold	No information available.
pH	10
Melting Point/Range	No data available
Boiling Point/Range	No information available.
Flash Point	No information available.
Evaporation Rate	No information available.



Flammability (solid,gas) No information available
 Flammability or explosive limits
 Upper No data available
 Lower No data available
 Vapor Pressure No information available.
 Vapor Density No information available.
 Relative Density No information available.
 Solubility Soluble in water
 Partition coefficient; n-octanol/water No data available
 Autoignition Temperature No information available.
 Decomposition temperature No information available.
 Viscosity No information available.



Reactive Hazard None known, based on information available.
 Stability Stable under normal conditions.
 Conditions to Avoid None known.
 Incompatible Materials None known
 Hazardous Decomposition Products None known
 Hazardous Polymerization Hazardous polymerization does not occur
 Hazardous Reactions None under normal processing



Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	Not listed	Not listed
Potassium carbonate	> 2000 mg/kg (Rat)	Not listed	Not listed
Potassium hydroxide	214 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available.

Sensitization No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	Not listed	Not listed	Not listed	Not listed	Not listed
Potassium carbonate	584-08-7	Not listed	Not listed	Not listed	Not listed	Not listed

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Potassium hydroxide	1310-58-3	Not listed	Not listed	Not listed	Not listed	Not listed
Potassium Borate	12228-88-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known.

STOT - repeated exposure None known.

Aspiration hazard No information available.

Symptoms / effects, both acute and delayed No information available.

Endocrine Disruptor Information No information available.

Other Adverse Effects The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Potassium carbonate	Not listed	LC50 <510 mg/L/96h (Pimephales promelas)	Not listed	Not listed
Potassium hydroxide	Not listed	80 mg/L LC50 96 h	Not listed	Not listed

Persistence and Degradability No information available.

Bioaccumulation/ Accumulation No information available

Mobility

Component	log Pow
Potassium hydroxide	0.83

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG/IMO

Not regulated

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Ethylenediaminetetraacetic acid, disodium salt dihydrate	-	X	-	-	-		X	-	X	X	-
Potassium carbonate	X	X	-	209-529-3	-		X	X	X	X	X
Potassium hydroxide	X	X	-	215-181-3	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Potassium hydroxide	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Potassium hydroxide	1000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Potassium hydroxide	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class Non-controlled

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 09-Dec-2009

Revision Date 09-Apr-2014

Print Date 09-Apr-2014

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS



Safety Data Sheet

Buffer Solution, pH 12.00

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Buffer Solution, pH 12.00

Synonyms/Generic Names: pH 12 Buffer

SDS Number: 125.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect, Teratogen, Reproductive hazard

Target Organs: Testes

Signal Words: Danger

Pictograms:



GHS Classification:

Reproductive toxicity	Category 1B
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GHS Label Elements, including precautionary statements:

Hazard Statements:

H360	May damage fertility or the unborn child.
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Precautionary Statements:

P201	Obtain special instructions before use.
P308+P313	If exposed or concerned: Get medical advice/attention.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	2
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	0
Reactivity	0
Personal	J

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Water	Balance	7732-18-5	231-791-2	H ₂ O	18.00 g/mol
Boric Acid	<1	10043-35-3	233-139-2	H ₃ BO ₃	61.83 g/mole
Potassium Chloride	<1	7447-40-7	231-211-8	KCl	74.55 g/mol
Sodium Hydroxide	<1	1310-73-2	215-185-5	NaOH	40.00 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (sodium oxides, hydrogen chloride gas, boron oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for	Neutralize spill. Absorb spill with noncombustible absorbent material, then

containment and cleaning up	place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.
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7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Boric Acid	2 mg/m ³	TLV	ACGIH
	6 mg/m ³	STEL	ACGIH
Sodium Hydroxide	2 mg/m ³	CEIL	ACGIH
	2 mg/m ³	PEL	OSHA
	2 mg/m ³	CEIL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles, with face shield if splashing is likely to occur.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, and apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid.
Odor	Not Available
Odor threshold	Not Available
pH	12.0
Melting point/freezing point	Not Available

Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Density	1.0089 g/cm ³ (water = 1)
Solubility (ies)	Not Available
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Strong oxidizing agents, acids,
Hazardous Decomposition Products	Sodium oxides, hydrogen chloride gas, boron oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	Not Available

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness.
Eyes	Redness, tearing, itching, burning.
Respiratory	Irritation of mucous membranes, coughing.
Ingestion	Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	Not Available
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Boric Acid, Sodium Hydroxide
SARA 312	Boric Acid, Sodium Hydroxide
SARA 313	Not Listed
WHMIS Canada	Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/11/2013
Revision 2	07/10/2013

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.



Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 29-Jan-2010

Revision Date 11-May-2015

Revision Number 2

Product Name Buffer Solution, pH 4.00
Cat No. : SB98-1; SB98-10; SB98-20; SB98-500; NC0682583
Synonyms (Certified)
Recommended Use Laboratory chemicals.
Uses advised against No information available
Details of the supplier of the safety data sheet

Company Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

Component	CAS-No	Weight %
Water	7732-18-5	98.93
1,2-Benzenedicarboxylic acid, monopotassium salt	877-24-7	1.0

Formaldehyde	50-00-0	0.05
Methyl alcohol	67-56-1	0.02

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

Ingestion Do not induce vomiting. If symptoms persist, call a physician.

Most important symptoms/effects No information available.

Notes to Physician Treat symptomatically

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media No information available

Flash Point Not applicable

Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Thermal decomposition can lead to release of irritating gases and vapors

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health 1	Flammability 0	Instability 0	Physical hazards N/A
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Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental Precautions Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Handling Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde	Ceiling: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWA EV
Formaldehyde	Ceiling: 2 ppm Ceiling: 3 mg/m ³	Ceiling: 2 ppm Ceiling: 3 mg/m ³	STEL: 1.0 ppm CEV: 1.5 ppm
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m ³ STEL: 250 ppm STEL: 328 mg/m ³ Skin	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 310 mg/m ³	TWA: 200 ppm STEL: 250 ppm Skin

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Physical State
Appearance
Odor
Odor Threshold
pH
Melting Point/Range
Boiling Point/Range
Flash Point
Evaporation Rate

Liquid
Clear
Odorless
No information available
4.0
No data available
No information available
Not applicable
No information available

Flammability (solid,gas)	No information available
Flammability or explosive limits	No data available
Upper	No data available
Lower	No information available
Vapor Pressure	No information available
Vapor Density	No information available
Relative Density	1.0054
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available



Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Excess heat.
Incompatible Materials	None known
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.



Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,2-Benzenedicarboxylic acid, monopotassium salt	3200 mg/kg (Rat)	Not listed	Not listed
Formaldehyde	500 mg/kg (Rat)	270 mg/kg (Rabbit)	0.578 mg/L (Rat) 4 h
Methyl alcohol	6200 mg/kg (Rat)	15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	May cause eye, skin, and respiratory tract irritation
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
1,2-Benzenedicarboxylic acid, monopotassium salt	877-24-7	Not listed	Not listed	Not listed	Not listed	Not listed
Formaldehyde	50-00-0	Group 1	Known	A2	X	A2
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans*
- Group 2A - Probably Carcinogenic to Humans*
- Group 2B - Possibly Carcinogenic to Humans*

NTP: (National Toxicity Program)

*NTP: (National Toxicity Program)
 Known - Known Carcinogen
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
 A1 - Known Human Carcinogen
 A2 - Suspected Human Carcinogen
 A3 - Animal Carcinogen
 ACGIH: (American Conference of Governmental Industrial Hygienists)*

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Teratogenicity No information available.
STOT - single exposure None known
STOT - repeated exposure None known
Aspiration hazard No information available
Symptoms / effects, both acute and delayed No information available
Endocrine Disruptor Information No information available
Other Adverse Effects See actual entry in RTECS for complete information.

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15 mg/L 96h	Not listed	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility

Component	log Pow
Formaldehyde	-0.35
Methyl alcohol	-0.74

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Formaldehyde - 50-00-0	U122	-
Methyl alcohol - 67-56-1	U154	-

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
1,2-Benzenedicarboxylic acid, monopotassium salt	X	X	-	212-889-4	-		X	X	X	X	X
Formaldehyde	X	X	-	200-001-8	-		X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Formaldehyde	50-00-0	0.05	0.1
Methyl alcohol	67-56-1	0.02	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Formaldehyde	X	100 lb	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depleters	Class 2 Ozone Depleters
Formaldehyde	X		-
Methyl alcohol	X		-

OSHA Occupational Safety and Health Administration

Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	2 ppm STEL 0.5 ppm Action Level 0.75 ppm TWA	TQ: 1000 lb

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Formaldehyde	100 lb	100 lb
Methyl alcohol	5000 lb	-

California Proposition 65 This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Formaldehyde	50-00-0	Carcinogen	40 µg/day	Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Formaldehyde	X	X	X	X	X
Methyl alcohol	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	11250 lb STQ (solution)

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2B Toxic materials



Prepared By Regulatory Affairs
 Thermo Fisher Scientific
 Email: EMSDS.RA@thermofisher.com

Creation Date 29-Jan-2010
Revision Date 11-May-2015
Print Date 11-May-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the

date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Buffer Solution, pH 7
Manufacturer EMD Chemicals Inc.
 P.O. Box 70
 480 Democrat Road
 Gibbstown, NJ 08027
 Prior to January 1, 2003 EMD Chemicals Inc. was EM
 Industries, Inc. or EM Science, Division of EM
 Industries, Inc.

Product Code BX1635
Effective Date 2/13/2006

For More Information Call
 856-423-6300 Technical Service
 Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call
 800-424-9300 CHEMTREC (USA)
 613-996-6666 CANUTEC (Canada)
 24 Hours/Day: 7 Days/Week

Synonym None.
Material Uses Laboratory Reagent
Chemical Family Solution.

+ Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Sodium Phosphate, Dibasic	7558-79-4	<1
Potassium Phosphate, Monobasic	7778-77-0	<1
Dowicide® A ® Trademark of the Dow Chemical Company.	132-27-4	0.05
Water	7732-18-5	97-100

+ Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview CAUTION !
 MAY BE HARMFUL IF SWALLOWED.
 MAY CAUSE EYE AND SKIN IRRITATION.
 WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Routes of Entry Inhalation. Ingestion.

Potential Acute Health Effects
Eyes May be hazardous in case of eye contact (irritant).
Skin May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Inhalation No known acute effects of this product resulting from inhalation.
Ingestion May be hazardous in case of ingestion.

Potential Chronic Health Effects
Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

+ Section 5. Fire Fighting Measures

Flammability of the Product Non-flammable.
Auto-ignition Temperature Not applicable.
Flash Points Not applicable.
Flammable Limits Not applicable.
Products of Combustion Not applicable.
Fire Hazards in Presence of Various Substances Not applicable.
Explosion Hazards in Presence of Various Substances Risks of explosion of the product in presence of static discharge: No.
 Risks of explosion of the product in presence of mechanical impact: No.
Fire Fighting Media and Instructions Not applicable.
Protective Clothing (Fire) Not applicable.
Special Remarks on Fire Hazards Not available.
Special Remarks on Explosion Hazards Not available.

+ Section 6. Accidental Release Measures

Small Spill and Leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill and Leak Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Spill Kit Information No specific spill kit required for this product.

Section 7. Handling and Storage

Handling Avoid contact with eyes, skin and clothing. Do not ingest. Wash thoroughly after handling.
Storage Keep container tightly closed. Keep container in a cool, well-ventilated area.

+ Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Personal Protection

Eyes Splash goggles.
Body Lab coat.
Respiratory Not applicable.
Hands Gloves.
Feet Not applicable.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name	Exposure Limits
Sodium Phosphate, Dibasic	Not available.
Potassium Phosphate, Monobasic	Not available.
Dowicide® A © Trademark of the Dow Chemical Company.	Not available.
Water	Not available.

+ Section 9. Physical and Chemical Properties

Odor	Odorless.
Color	Clear. Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	7 [Neutral.]
Boiling/Condensation Point	The lowest known value is 99.9°C (211.8°F) (Water).
Melting/Freezing Point	May start to solidify at -0.1°C (31.8°F) based on data for: Water.
Specific Gravity	Not available.
Vapor Pressure	Not available.
Vapor Density	Not available.
Odor Threshold	Not available.
Evaporation Rate	0.36 (Water) compared to (n-Butyl Acetate =1)
LogKow	Not available.
Solubility	Soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Not available.
Rem./Incompatibility	Not available.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Sodium Phosphate, Dibasic, Anhydrous, GR	WC4500000
	Potassium Phosphate	TC6615500
	Water	ZC0110000
	Dowicide A	DV7700000
Toxicity	LD50: Not available. LC50: Not available.	
Chronic Effects on Humans	Not available.	
Acute Effects on Humans	May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of ingestion.	
Synergetic Products (Toxicologically)	Not available.	
Irritancy	Draize Test: Not available.	
Sensitization	Not available.	
Carcinogenic Effects	This material is not known to cause cancer in animals or humans.	
Toxicity to Reproductive System	Not available.	
Teratogenic Effects	Not available.	
Mutagenic Effects	Not available.	

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.

Section 13. Disposal Considerations

EPA Waste Number	Not available.
Treatment	Material does not have an EPA Waste number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14. Transport Information

DOT Classification Proper Shipping Name: CHEMICALS, N.O.S.
RQ: Not applicable.

TDG Classification Not available.

IMO/MDG Classification Proper Shipping Name: CHEMICALS, N.O.S.
RQ: Not applicable.

ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA §(b) inventory: Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: SODIUM PHOSPHATE, DIBASIC, ANHYDROUS ; Dowicide A
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: SODIUM PHOSPHATE, DIBASIC, ANHYDROUS
: Immediate (Acute) Health Hazard; Dowicide A: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Sodium Phosphate, Dibasic
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) Not controlled under WHMIS (Canada).
CEPA DSL: Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Sodium Phosphate, Dibasic 231-448-7
Potassium Phosphate, Monobasic 231-913-4
Dowicide® A ® Trademark of the Dow Chemical Company. 205-055-6
Water 231-791-2

DSCL (EEC) This product is not classified according to the EU regulations.

International Lists Australia (NICNAS): Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water

Japan (MITI): Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water

Japan (MOL): Dowicide® A ® Trademark of the Dow Chemical Company.

Korea (TCCL): Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water

Philippines (RA6969): Sodium Phosphate, Dibasic ; Potassium Phosphate, Monobasic; Dowicide® A ® Trademark of the Dow Chemical Company. ; Water
China: No products were found.

State Regulations Pennsylvania RTK: Sodium Phosphate, Dibasic : (environmental hazard, generic environmental hazard)
Massachusetts RTK: Sodium Phosphate, Dibasic ; Dowicide® A ® Trademark of the Dow Chemical Company.
New Jersey: Buffer Solution, pH 7
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Dowicide® A ® Trademark of the Dow Chemical Company.
California prop. 65 (no significant risk level): Dowicide® A ® Trademark of the Dow Chemical Company.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Dowicide® A ® Trademark of the Dow Chemical Company.

Section 16. Other Information

**National
Fire
Protection
Association
(U.S.A.)**

Health 1 0 0 Fire Hazard
Reactivity
Specific
Hazard

Changed Since Last +
Revision
Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

Buffer Solution, pH 7

BX1635

Page: 1/1



SAFETY DATA SHEET

Creation Date 26-Jun-2014

Revision Date 26-Jun-2014

Revision Number 1

Product Name Buffer Solution, pH 7.00, Color-Coded Yellow, Certified

Cat No. : AC611060040; AC 611065000

Synonyms None.

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01
/ **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 /
Europe: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 /
Europe:001-703-527-3887

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

Component	CAS-No	Weight %
Water	7732-18-5	99.18
Dihydrogen potassium phosphate	7778-77-0	0.7
Sodium hydroxide	1310-73-2	0.1
FD&C yellow No. 5	1934-21-0	0.0 - 0.02

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if symptoms occur.

Skin Contact Rinse with plenty of water. Get medical attention if symptoms occur.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

Ingestion Do not induce vomiting. Get medical attention if symptoms occur.

Most important symptoms/effects Notes to Physician No information available. Treat symptomatically

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media No information available

Flash Point Method - Not applicable
No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Non-combustible. None reasonably foreseeable.

Hazardous Combustion Products
None under normal use conditions

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health 1	Flammability 0	Instability 0	Physical hazards N/A
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Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental Precautions Avoid release to the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Handling Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide	Ceiling: 2 mg/m ³	(Vacated) Ceiling: 2 mg/m ³ TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Sodium hydroxide	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³	CEV: 2 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eyeface Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

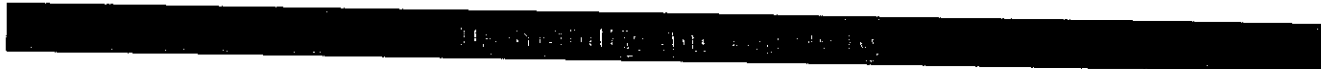
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.



Physical State	Liquid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	7.00 @ 25°C
Melting Point/Range	0 °C / 32 °F
Boiling Point/Range	100 °C / 212 °F
Flash Point	Not applicable
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	760 mmHg @ 20 °C
Vapor Density	No information available
Relative Density	1.0
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available



Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	None known.
Incompatible Materials	None known
Hazardous Decomposition Products	None under normal use conditions
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.



Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dihydrogen potassium phosphate	Not listed	>4640 mg/kg (Rabbit)	Not listed
Sodium hydroxide	Not listed	1350 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Dihydrogen potassium phosphate	7778-77-0	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium hydroxide	1310-73-2	Not listed	Not listed	Not listed	Not listed	Not listed
FD&C yellow No. 5	1934-21-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium hydroxide	-	45.4 mg/L LC50 96 h	-	-

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

All of the components in the product are on the following inventory lists: Australia X = listed China Canada Europe TSCA Korea Philippines

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Dihydrogen potassium phosphate	X	X	-	231-913-4	-		X	X	X	X	X
Sodium hydroxide	X	X	-	215-185-5	-		X	X	X	X	X
FD&C yellow No. 5	X	X	-	217-699-5	-		X	X	X	X	X

Legend:

- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium hydroxide	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sodium hydroxide	1000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium hydroxide	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 26-Jun-2014

Revision Date 26-Jun-2014

Print Date 26-Jun-2014

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

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Butanol, Reagent Grade

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Butanol, Reagent Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25209

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Flammable

Flammable liquids, category 3



Irritant

Acute toxicity (oral, dermal, inhalation), category 4

Skin irritation, category 2

Specific target organ toxicity following single exposure, category 3



Corrosive

Serious eye damage, category 1

Flam. Liq. 3
Acute Tox. 4
Skin Irrit. 2
Eye Dam. 1
STOT SE 3

Signal word :Danger

Hazard statements:

Flammable liquid and vapour

Harmful if swallowed

Causes skin irritation

Causes serious eye damage

May cause respiratory irritation

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

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Butanol, Reagent Grade

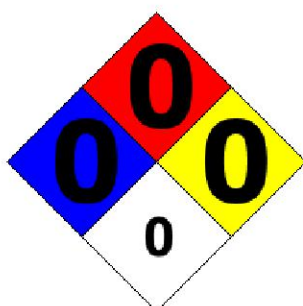
Keep away from heat/sparks/open flames/hot surfaces. No smoking
Avoid breathing dust/fume/gas/mist/vapours/spray
Use only outdoors or in a well-ventilated area
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/light/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection
Wash skin thoroughly after handling
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
In case of fire: Use agents recommended in section 5 for extinction
Specific treatment (see supplemental first aid instructions on this label)
Take off contaminated clothing and wash before reuse
IF ON SKIN: Wash with soap and water
If skin irritation occurs: Get medical advice/attention
Call a POISON CENTER or doctor/physician if you feel unwell
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing
Store in a well ventilated place. Keep container tightly closed
Store locked up
Dispose of contents and container to an approved waste disposal plant

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	0
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:

CAS 71-36-3	Butanol	>99 %
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Percentages are by weight

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Butanol, Reagent Grade

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact: Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort, or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Headache. Nausea. Shortness of breath.;

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Oxides of carbon. Flash back possible over considerable distance. Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment: Wear protective eyewear, gloves, and clothing. Refer to Section 8. Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. Containerize for disposal. Refer to Section 13. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials.

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Butanol, Reagent Grade

Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials.

SECTION 8 : Exposure controls/personal protection



Control Parameters:

71-36-3, Butanol, ACGIH TLV TWA 20 ppm
71-36-3, Butanol, OSHA PEL TWA 300.0 mg/m³
71-36-3, Butanol, NIOSH TWA 150.0 mg/m³

Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin:

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection:

Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Safety glasses or goggles are appropriate eye protection.

General hygienic measures:

Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear, colorless liquid.	Explosion limit lower: Explosion limit upper:	Not Determined Not Determined
Odor:	Alcohol	Vapor pressure:	6.7 mm Hg
Odor threshold:	Not Determined	Vapor density:	2.6
pH-value:	Not Determined	Relative density:	0.81
Melting/Freezing point:	116 C	Solubilities:	Slightly in water.

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Butanol, Reagent Grade

Boiling point/Boiling range:	- 89.5 C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	35 C	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	0.46	Decomposition temperature:	Not Determined
Flammability (solid,gaseous):	Not Determined	Viscosity:	a. Kinematic:Not Determined b. Dynamic: Not Determined
Density: Not Determined			

SECTION 10 : Stability and reactivity

Reactivity:Nonreactive under normal conditions.

Chemical stability:Stable under normal conditions.

Possible hazardous reactions:None under normal processing.

Conditions to avoid:Incompatible materials.

Incompatible materials:

Hazardous decomposition products:

SECTION 11 : Toxicological information

Acute Toxicity:		
Oral:	790 mg/kg	LD50 rat:
Inhalation:	8000 ppm/4H	LC50 rat:
Chronic Toxicity: No additional information.		
Corrosion Irritation: No additional information.		
Sensitization:	No additional information.	
Single Target Organ (STOT):	No additional information.	
Numerical Measures:	No additional information.	
Carcinogenicity:	No additional information.	
Mutagenicity:	No additional information.	
Reproductive Toxicity:	No additional information.	

SECTION 12 : Ecological information

Ecotoxicity

LC50 - Pimephales promelas (fathead minnow) : 1,840 mg/l - 96 h

EC50 - Daphnia magna (Water flea): 1,983 mg/l - 48 h

Persistence and degradability:

Bioaccumulative potential: Bioconcentration factor (BCF) : 0.38. Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l

Mobility in soil:

Butanol, Reagent Grade

Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14 : Transport information

UN-Number

1120

UN proper shipping name

Butanols

Transport hazard class(es)



Class:

3 Flammable liquids

Packing group: III

Environmental hazard:

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire

SARA Section 313 (Specific toxic chemical listings):

71-36-3 Butanol

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients is listed

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

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None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

Effective date : 02.10.2015

Last updated : 03.19.2015

Butylated Hydroxy Toluene

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Butylated Hydroxy Toluene

Synonyms/Generic Names: BHT; Ionol; Ionol (antioxidant); 2,6-Di-tertbutyl-p-cresol, 2,6-Bis(1,1-dimethylethyl)-4-methylphenol, 2,6-Di-tert-butyl-1-hydroxy-4-methylbenzene, 2,6-Di-tertbutyl-p-methylphenol, 3,5-Di-tert-butyl-4-hydroxytoluene, 4-Methyl-2,6-di-tert-butylphenol, Butylated hydroxytoluene, Butylhydroxytoluene

SDS Number: 137.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Harmful by ingestion, Irritant

Target Organs: None

Signal Words: Warning

Pictograms:



GHS Classification:

Acute toxicity, Oral	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

GHS Label Elements, including precautionary statements:

Hazard Statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P273	Avoid release to the environment.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Ingestion	Harmful if swallowed.

NFPA Ratings

Health	2
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	0
Reactivity	0
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Butylated Hydroxy Toluene	100	128-37-0	204-881-4	C ₁₅ H ₂₄ O	220.35 g/mol

4. FIRST-AID MEASURES

Eyes	In case of eye contact, rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides) under fire conditions. See also Stability and Reactivity section.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.

Methods and materials for containment and cleaning up	Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.
--------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Butylated Hydroxy Toluene	2 mg/m ³	TLV	ACGIH
	10 mg/m ³	REL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, apron or lab coat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless to pale yellow solid.
Odor	Phenolic.
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	70°C (158°F)
Initial boiling point and boiling range	265°C (509°F)
Flash point	127°C (261°F)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available

Upper/lower flammability or explosive limit	Not Available
Vapor pressure	0.01 hPa (0.01 mmHg) at 20°C (68°F)
Vapor density	7.6 (air=1)
Relative density	0.833 (water = 1)
Solubility (ies)	Soluble in methanol, acetone, toluene, isopropanol, methyl ethyl ketone, ethanol, petroleum ether, benzene, cellosolve, linseed oil.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	470°C (878°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Excess heat.
Incompatible Materials	Acid chlorides, acid anhydrides, oxidizing agents, bases, brass, copper.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 – Rat – 890 mg/kg

Carcinogenicity

IARC	3-Group 3: Not classifiable as to its carcinogenicity to humans (butylated hydroxyl toluene).
ACGIH	A4: Not classifiable for human or animal (butylated hydroxyl toluene).
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Mild to moderate skin irritation. May cause allergic reaction (dermatitis).
Eyes	Moderate irritation, redness, watering of eyes.
Respiratory	Coughing, wheezing.
Ingestion	Dizziness, weakness, slurred speech, ataxia, headache, confusion.

Chronic Toxicity	May cause damage to blood, liver, central nervous system.
Teratogenicity	May cause adverse reproductive effects and birth defects.
Mutagenicity	Mutagenic to bacteria and yeast. May affect genetic material.
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – <i>Oryzias latipes</i> – 5.3 mg/L – 48h
Aquatic Invertebrate	EC50 – <i>Daphnia pulex</i> – 1.44 mg/L – 48h
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (BUTYLATED HYDROXYTOLUENE), 9, pg III
IMDG	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (BUTYLATED HYDROXYTOLUENE), 9, pg III
Marine Pollutant	Yes
IATA/ICAO	UN3077, Environmentally hazardous substance, solid, n.o.s., (butylated hydroxytoluene), 9, pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class D-1B: Poisonous and infectious material- Immediate and serious effects- Toxic Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/08/2013
Revision 2	06/21/2013

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