B

Section 1 Chemical Product and Company Identification

ward's science

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

Boreal Science
399 Vansickle Road
St. Catherines, 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**
Synonyms	Barium Dichloride

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.

(2012 EMERGENCY RESPONSE GUIDEBOOK, (PHH50-ERG2012), GUIDE # 154)

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 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
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 963°C (1765°F)
Boiling point: 1560°C (2840°F)
Flash point: Not flammable

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Negligible
Vapor density (Air = 1): 7.21
Relative density (Specific gravity): 3.9
Solubility(ies): Soluble in water.

Partition coefficient: Data not available
Auto-ignition temperature: Data not available
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: $BaCl_2$
Molecular weight: 208.27

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
Carcinogenity: 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 gastrenteritis, 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 hearbeat. 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 **Marine pollutant:** No
Exceptions: Limited quantity equal to or less than 5 Kg **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	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.

COLUMBUS CHEMICAL INDUSTRIES INC.

Safety Data Sheet

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_2BaO_2+8H_2O	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

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	$C_8H_8O_3$	152.16	<0.1%
Water	7732-18-5	H_2O	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/m^3 (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.
Chronic effects: N.A.
Target organs: Heart, nerves, kidneys, GI system, bone marrow, spleen, liver, and blood.

ORL-RAT LD_{50}: 355 mg/kg as barium nitrate
IHL-RAT LC_{50}: N.A.
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

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)

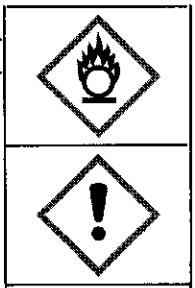
SDS #: 97.00
Revision Date: March 24, 2014

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/m^3 (OSHA/ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Beige powder. Odorless.
Soluble: Acids. Slightly in water.

Boiling point: Loses O_2 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 LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
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 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

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

Revision Date: March 24, 2014

SAFETY DATA SHEET

Bath & Body Works Gentle Foaming Soap

Section 1. Identification

GHS product identifier : Bath & Body Works Gentle Foaming Soap

Other means of identification : Not available.

Product code : Not available.

Product type : Liquid.

Identified uses : Hand soap.

Supplier : Bath & Body Works
7 Limited Parkway Reynoldsburg, OH 43068

Manufacturer : KDC-Lynchburg
Lynchburg, Virginia

KDC-Columbus
New Albany, Ohio

Emergency telephone number (with hours of operation) : 1-800-395-1001 (24 hours)

Section 2. Hazards identification

When used according to instructions, the product applicable to this MSDS is safe and presents no immediate or long-term health hazard. However, abnormal entry routes, such as gross ingestion, may require medical attention.

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Hazards not otherwise classified (HNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	%	CAS number
Ammonium dodecyl sulphate	≥5 - <10	2235-54-3
Polyethylene glycol monooleyl ether	≥1 - <3	9004-98-2
Poly(oxy-1,2-ethanediyl), α-(3-carboxy-1-oxo-3-sulfopropyl)-ω-(dodecyloxy)-, sodium salt (1:2)	≥1 - <3	39354-45-5
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., inner salts	≥1 - <3	61789-40-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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. Get medical attention if irritation occurs.

Inhalation : Move exposed person to fresh air. Get medical attention if symptoms occur.

Skin contact : Can be applied directly to the skin. Stop using the product and get medical attention if irritation develops.

Ingestion : Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

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

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

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 : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/oxides

Special protective actions for fire-fighters : No special measures are required.

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. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized 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

Small spill : Stop leak if without risk. Move containers from spill area. 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.

Section 6. Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. 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. 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 : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not ingest. Avoid contact with eyes. Store and use away from heat, sparks, open flame or any other ignition source.

Advice on general occupational hygiene : Pay attention to good general hygiene and housekeeping. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Section 8. Exposure controls/personal protection

This product is a cosmetic used by consumers. Therefore it is EXEMPTED from the regulatory requirements under the CPR and WHMIS law in Canada. This MSDS has been written for the end users of this product, and for information purpose only. Workers involved in the manufacturing of the product shall rely on raw material MSDSs for their own safety.

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective 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.

Individual protection measures

Hygiene measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Not required under normal conditions of use.

Skin protection

Hand protection : Not required under normal conditions of use.

Body protection : Not required under normal conditions of use.

Other skin protection : Not required under normal conditions of use.

Respiratory protection : Not required under normal conditions of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Flowable liquid]

Color : Varies per fragrance.

Odor : Varies per fragrance.

Odor threshold : Not available.

pH : 5 to 6.4

Melting point : Not available.

Boiling point : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1 to 1.03

Solubility in water : Soluble in water.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

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 : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

No acute or chronic toxic effects are expected when used according to directions.

Information on toxicological effects

Acute toxicity

There is no data available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ammonium dodecyl sulphate	Eyes - Moderate irritant	Rabbit	-	24 hours 100 µL	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 µL	-
Polyethylene glycol monooleyl ether	Eyes - Moderate irritant	Rabbit	-	100 µL	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Poly(oxy-1,2-ethanediyl), α-(3-carboxy-1-oxo-3-sulfopropyl)-ω-(dodecyloxy)-, sodium salt (1:2)	Skin - Mild irritant	Rabbit	-	500 mg	-
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., inner salts	Eyes - Severe irritant	Rabbit	-	24 hours 100 µL	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Section 11. Toxicological information

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

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

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

There is no data available.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

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 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

AERG : Not applicable

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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 : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Section 15. Regulatory information

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Ammonium dodecyl sulphate	≥5 - <10	No.	No.	No.	Yes.	No.
Polyethylene glycol monooleyl ether	≥1 - <3	No.	No.	No.	Yes.	No.
Poly(oxy-1,2-ethanediyl), α-(3-carboxy-1-oxo-3-sulfopropyl)-ω-(dodecyloxy)-, sodium salt (1:2)	≥1 - <3	No.	No.	No.	Yes.	No.
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., inner salts	≥1 - <3	No.	No.	No.	Yes.	No.

SARA 313

No products were found.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Section 16. Other information

History

Date of issue mm/dd/yyyy : 12/15/2015

Date of previous issue : 06/15/2013

Version : 2

Prepared by : KMK Regulatory Services Inc.

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

1. Identification

Product identifier Battery Cleaner with Acid Indicator

Other means of identification

Product code 05023, 05623

Recommended use Battery cleaner

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.

Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service 800-272-4620

24-Hour Emergency (CHEMTREC) 800-424-9300 (US)
703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards Gases under pressure — Liquefied gas

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Contains gas under pressure; may explode if heated.

Precautionary statement

Prevention Do not puncture or incinerate container. Do not expose to heat or store at temperatures above 49°C/120°F. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying.

Response Wash hands after handling.

Storage Protect from sunlight. Store in a well-ventilated place. Exposure to high temperature may cause can to burst.

Disposal Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	80 - 90
Liquefied Petroleum Gas		68476-86-8	5 - 10
2-Butoxyethanol		111-76-2	1 - 3

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a POISON CENTER or doctor/physician.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Contents under pressure. Pressurized container may rupture when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not get in eyes, on skin, or on clothing. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Conditions for safe storage, including any incompatibilities	Level 1 Aerosol. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3
		50 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	24 mg/m3
		5 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2-Butoxyethanol (CAS 111-76-2) Skin designation applies.

US - Tennessee OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as: Nitrile.

Other Wear suitable protective clothing.

Respiratory protection If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form	Aerosol.
Color	Clear.
Odor	Odorless.
Odor threshold	Not available.
pH	8.5
Melting point/freezing point	-103 °F (-75 °C) estimated
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	None (Tag Closed Cup)
Evaporation rate	Slow.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.3 % estimated
Flammability limit - upper (%)	10.6 % estimated
Vapor pressure	265.9 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	1.01
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	446 °F (230 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	Not available.
Percent volatile	94.3 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.

Product	Species	Test Results
Battery Cleaner with Acid Indicator		
Acute		
Dermal		
LD50	Rabbit	15187 mg/kg estimated
Inhalation		
LC50	Rat	83 mg/l, 4 hours estimated
Oral		
LD50	Rat	21294 mg/kg estimated

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Butoxyethanol (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects May be harmful if absorbed through skin.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

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.

Product		Species	Test Results
Battery Cleaner with Acid Indicator			
Aquatic			
Acute			
Crustacea	EC50	Daphnia	54385.9648 mg/l, 48 hours estimated
Fish	LC50	Fish	5472.7153 mg/l, 96 hours estimated

Components		Species	Test Results
2-Butoxyethanol (CAS 111-76-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1550 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 1000 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
2-Butoxyethanol	0.81, log Pow
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products	The dispensed liquid product is not a RCRA hazardous waste (See 40 CFR Part 261.20 - 261.33). Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national regulations.
Hazardous waste code	Not regulated.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable, limited quantity
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	2.2
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	Not available.
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable, limited quantity
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

2-Butoxyethanol (CAS 111-76-2)

CERCLA Hazardous Substance List (40 CFR 302.4)

2-Butoxyethanol (CAS 111-76-2) Listed.

CERCLA Hazardous Substances: Reportable quantity

Not listed.

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - Yes Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Liquefied Petroleum Gas (CAS 68476-86-8)
2-Butoxyethanol (CAS 111-76-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

2-Butoxyethanol (CAS 111-76-2)

US. Massachusetts RTK - Substance List

2-Butoxyethanol (CAS 111-76-2)

US. Pennsylvania Worker and Community Right-to-Know Law

2-Butoxyethanol (CAS 111-76-2)

US. Rhode Island RTK

2-Butoxyethanol (CAS 111-76-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s))	7.9 %
Consumer products (40 CFR 59, Subpt. C)	Not regulated

State

Consumer products	Not regulated
VOC content (CA)	7.9 %

VOC content (OTC) 7.9 %

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-24-2015

Prepared by Allison Cho

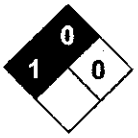
Version # 01

Further information CRC # 530C

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0
Personal protection: B

NFPA ratings
Health: 1
Flammability: 0
Instability: 0

NFPA ratings



Disclaimer

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. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries.

BD

Becton Dickinson and Company

Material Safety Data Sheet

SECTION 1 – PRODUCT IDENTIFICATION

NAME Becton Dickinson Diabetes Care		ADDRESS One Becton Drive, Franklin Lakes, NJ 07417-1883
TELEPHONE NUMBER (201) 847-7000	FOR ADDITIONAL INFORMATION CONTACT: 1-888-237-2762	DATE PREPARED May 20, 2009
COMMON NAME (USED ON LABEL) 70% Isopropyl Alcohol Preps		CHEMICAL FAMILY Alcohol
CHEMICAL NAME Isopropyl Alcohol		FORMULA $(CH_3)_2CHOH$
TRADE NAME & SYNONYMS BD Alcohol Swabs		

SECTION 2 - COMPOSITION

HAZARDOUS COMPONENT	CAS #	%(WT)	TLV	PEL
Isopropyl Alcohol	67-63-0	70	980 Mg/M3	980 Mg/M3

PEL: Permissible Exposure Limit established by the Occupational Safety and Health Administration (OSHA).
TLV: Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1986-1987.

SECTION 3 – HAZARD IDENTIFICATION

Irritant (Xi) : R36 - Irritating to eyes.
Highly flammable (F) : R11 - Highly flammable.
Other : R67 - Vapors may cause drowsiness and dizziness.

PRIMARY ROUTES OF EXPOSURE
Skin, Eye, Inhalation or Ingestion

SIGNS AND SYMPTOMS OF EXPOSURE
(1) ACUTE OVEREXPOSURE Direct contact with eyes may result in irritation. Target Organs: Eyes, skin and respiratory tract.

(2) CHRONIC OVEREXPOSURE - Prolonged contact with skin may result in drying or irritation. Prolonged inhalation of vapors may cause slight headaches or dizziness. Prolonged exposure to vapors may result in eye irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
Isopropyl alcohol is not a known liver or kidney toxin; persons with impaired liver or renal function should limit exposure.

CHEMICAL/COMPONENT LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN	NTP	LARC	OSHA
None	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

OTHER EXPOSURE LIMITS None determined.

SECTION 4 – FIRST AID MEASURES

EMERGENCY & FIRST AID PROCEDURES:
EYE CONTACT: Flush with water for 15 minutes, seek medical attention.
SKIN CONTACT: Flush with water for 15 minutes.
INGESTION: Not likely; if ingestion occurs, do not induce vomiting, seek medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT 12 degrees C (Isopropyl Alcohol 99%)	FLAMMABLE LIMITS IN AIR (% by Volume) LOWER: 2.0% UPPER: 12.7%
EXTINGUISHING MEDIA Carbon Dioxide, alcohol foam or dry chemical	AUTO IGNITION TEMPERATURE 399 degrees C

UNUSUAL FIRE AND EXPLOSION HAZARDS
None

SPECIAL FIRE FIGHTING PROCEDURES
Use self-contained breathing apparatus when in close proximity to fire.

SECTION 6 – ACCIDENTIAL RELEASE MEASURES

8 STEPS TO BE TAKEN IN CASE MATERIAL IS LEAKED OR SPILLED
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition.

WASTE DISPOSAL METHOD
Dispose of in accordance with applicable local, state and federal laws.

SECTION 7 – HANDELING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
Store away from heat and ignition sources.

OTHER PRECAUTIONS
Not determined.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION
Respiratory protection is not required under normal use.

VENTILATION
For normal use - use in a well ventilated area.

PROTECTIVE GLOVES Not required under normal use.	EYE PROTECTION Not required under normal use.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
Not required under normal use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT 82.4 degrees C	SPECIFIC GRAVITY (H_2O =1 .869 - .879 at 25 degrees C	VAPOR PRESSURE (mm Hg) 33mm at 20 degrees C

PERCENT VOLATILE BY VOLUME (%) 100%	VAPOR DENSITY (AIR =1) 2.07	EVAPORATION RATE (Butyl Acetate =1) 2.88

SOLUBILITY IN WATER Soluble	REACTIVITY IN WATER Does not apply	FLASH POINT 12 degrees C (Isopropyl Alcohol 99%)

APPEARANCE AND ODOR
Saturated pad, colorless liquid with an alcohol odor.

SECTION 10 – STABILITY AND REACTIVITY DATA

STABILITY Unstable ☐ Stable ☒	CONDITIONS TO AVOID Sources of ignition, excessive heat

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong Oxidizers, acetaldehyde chlorine, ethylene oxide, acids, isocyanates

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide, carbon dioxide.

HAZARDOUS POLYMERIZATION
May Occur ☐ Will not Occur ☒

SECTION 11 – TOXICOLOGICAL INFORMATION

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
Store away from heat and ignition sources.

OTHER PRECAUTIONS
Not determined.

SECTION 12 – ECOLOGICIAL INFORMATION

Environmental Fate:
This product is classified as a Volatile Organique Component according to Directive 1999/13/EC.
Mobility : Product completely soluble in water.
Persistence and Degradability : Easily biologically degrable.
By major discharge of product in surface waters, a lack of oxygen may occur.
Bioaccumulation : Little chance on bioaccumulation.
* Ecotoxicity : Ecotoxic up to a small extent.
Weak water pollutant (WGK 1).

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal
State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 – TRANSPORTATION INFORMATION

Proper Shipping Name: ISOPROPANOL SOLUTION
Hazard Class: 3
UN/NA: UN1219
Packing Group: II
Containers of 1L or less may be shipped as Consumer Commodity ORM-D

SECTION 15 – REGULATORY INFORMATION

US FEDERAL
TSCA
CAS# 67-63-0 is listed on the TSCA inventory.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 67-63-0: immediate, delayed, fire.
Section 313
This material contains Isopropyl alcohol (CAS# 67-63-0, 70%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
European/International Regulations
EC Number: 200-661-7
European Labeling in Accordance with EC Directives
Hazard Symbols:
XI F
Risk Phrases:
R 11 Highly flammable.
R 36 Irritating to eyes.
R 67 Vapors may cause drowsiness and dizziness.
Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 7 Keep container tightly closed.

SECTION 16 – OTHER INFORMATION

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution.

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Ammonia
PRODUCT Brand	Beacon
ISSUE DATE	February 1, 2009

EMERGENCY TELEPHONE NUMBERS

DISTRIBUTER Q-PAK CORP.
STREET ADDRESS 2145 McCarter Hwy.
CITY, STATE, ZIP Newark, NJ 07104

Transportation: (800) 424-9300*
*for spill, leak, fire or transport accident emergencies
Product Information: (973) 483-4404

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

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

STORAGE PRECAUTIONS.....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 EQUIPTMENT

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

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY	STABLE	X	UNSTABLE

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

POLYMERIZATION	WILL NOT OCCUR	X	MAY OCCUR

CONDITIONS TO AOID Not applicable

SECTION 11 – TOXICOLOGICAL INFORMATION

CARCINOGENICITY

THIS PRODUCT CONTAINS A KNOWN OR SUSPECTED CARCINOGEN

X **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**	X	**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.

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

SECTION 14 – TRANSPORT INFORMATION

DOT CLASSIFICATION	**HAZARDOUS**	**NOT HAZARDOUS** **X**

DESCRIPTION NOT APPLICABLE

HM CODE NONE

SECTION 15 – REGULATORY INFORMATION

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

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

Chemical Name	CAS #	%
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

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

	ACGIH		OSHA PEL	
Chemical Name	**(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/m3 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

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

SAFETY DATA SHEET

Revision Date: *11-Dec-2020* **Revision Number:** *7*

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	**BENJAMIN MOORE ULTRA SPEC 500 INTERIOR EGGSHELL BASE 1**
Product Code	**S5381X**
Alternate Product Code	S5381X
Product Class	Water thinned paint
Color	All
Recommended use	Paint
Restrictions on use	No information available

Initial Supplier Identifier
Benjamin Moore & Co. Ltd.
8775 Keele Street
Concord, ON L4K 2N1
www.benjaminmoore.ca
Telephone: 1-800-361-5898

Manufacturer
Benjamin Moore & Co.
101 Paragon Drive
Montvale, NJ 07645
Phone: 1-866-708-9180
www.benjaminmoore.com

Emergency Telephone
CHEMTREC: +1 703-741-5970 /
1-800-424-9300
+1-703-527-3887 outside US & Canada
CANUTEC: 613-996-6666 (Canada Transport Emergency Only)

2. HAZARDS IDENTIFICATION

Classification

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

This chemical is considered hazardous by the Hazardous Products Regulations (HPR: SOR/2015-17)

Reproductive toxicity	Category 2

Label elements

Warning

Hazard statements
Suspected of damaging fertility or the unborn child

Appearance liquid **Odor** little or no odor

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable

Other information
No information available

WARNING: This product contains isothiazolinone compounds at levels of <0.1%. These substances are biocides commonly found in most paints and a variety of personal care products as a preservative. Certain individuals may be sensitive or allergic to these substances, even at low levels.

3. COMPOSITION INFORMATION ON COMPONENTS

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Titanium dioxide	13463-67-7	10 - 30%	-	-
Kaolin, calcined	92704-41-1	1 - 5%	-	-
Limestone	1317-65-3	1 - 5%	-	-
Nepheline syenite	37244-96-5	1 - 5%	-	-
Trimethylolpropane	77-99-6	0.1 - 0.25%	-	-

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

4. FIRST AID MEASURES

General Advice No hazards which require special first aid measures.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion	Clean mouth with water and afterwards drink plenty of water. Consult a physician if necessary.
Most Important Symptoms/Effects	None known.
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.
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.
Specific Hazards Arising From The Chemical	Closed containers may rupture if exposed to fire or extreme heat.
Sensitivity to mechanical impact	No
Sensitivity to static discharge	No

Flash Point Data

Flash point (°F)	Not applicable
Flash Point (°C)	Not applicable
Method	Not applicable

Flammability Limits In Air

Lower flammability limit:	Not applicable
Upper flammability limit:	Not applicable

NFPA **Health:** 2 **Flammability:** 0 **Instability:** 0 **Special:** Not Applicable

NFPA Legend
0 - Not Hazardous
1 - Slightly
2 - Moderate
3 - High
4 - Severe

The ratings assigned are only suggested ratings, the contractor/employer has ultimate responsibilities for NFPA ratings where this system is used.

Additional information regarding the NFPA rating system is available from the National Fire Protection Agency (NFPA) at www.nfpa.org.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.
Other Information	Prevent further leakage or spillage if safe to do so.

Environmental precautions See Section 12 for additional Ecological Information.

Methods for Cleaning Up Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling Avoid contact with skin, eyes and clothing. Avoid breathing vapors, spray mists or sanding dust. In case of insufficient ventilation, wear suitable respiratory equipment.

Storage Keep container tightly closed. Keep out of the reach of children.

Incompatible Materials No information available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Chemical name	OSHA PEL	ACGIH TLV	Alberta	British Columbia	Ontario	Quebec
Titanium dioxide	15 mg/m³ - TWA	TWA: 10 mg/m³	10 mg/m³ - TWA	10 mg/m³ - TWA 3 mg/m³ - TWA	10 mg/m³ - TWA	10 mg/m³ - TWAEV
Limestone	15 mg/m³ - TWA 5 mg/m³ - TWA	N/E	10 mg/m³ - TWA	10 mg/m³ - TWA 3 mg/m³ - TWA 20 mg/m³ - STEL	N/E	10 mg/m³ - TWAEV
Nepheline syenite	N/E	N/E	N/E	N/E	10 mg/m³ - TWA	N/E

Legend
OSHA - Occupational Safety & Health Administration Exposure Limits
ACGIH - American Conference of Governmental Industrial Hygienists
Alberta - Alberta Occupational Exposure Limits
British Columbia - British Columbia Occupational Exposure Limits
Ontario - Ontario Occupational Exposure Limits
Quebec - Quebec Occupational Exposure Limits
N/E - Not Established

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.
Skin Protection Protective gloves and impervious clothing.
Respiratory Protection In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene Measures Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	liquid
Odor	little or no odor
Odor Threshold	No information available
Density (lbs/gal)	10.5 - 10.6
Specific Gravity	1.26 - 1.28
pH	No information available
Viscosity (cps)	No information available
Solubility(ies)	No information available
Water solubility	No information available
Evaporation Rate	No information available
Vapor pressure	No information available
Vapor density	No information available
Wt. % Solids	45 - 55
Vol. % Solids	30 - 40
Wt. % Volatiles	45 - 55
Vol. % Volatiles	60 - 70
VOC Regulatory Limit (g/L)	0
Boiling Point (°F)	212
Boiling Point (°C)	100
Freezing point (°F)	32
Freezing Point (°C)	0
Flash point (°F)	Not applicable
Flash Point (°C)	Not applicable
Method	Not applicable
Flammability (solid, gas)	Not applicable
Upper flammability limit:	Not applicable
Lower flammability limit:	Not applicable
Autoignition Temperature (°F)	No information available
Autoignition Temperature (°C)	No information available
Decomposition Temperature (°F)	No information available
Decomposition Temperature (°C)	No information available
Partition coefficient	No information available

10. STABILITY AND REACTIVITY

Reactivity	Not Applicable
Chemical Stability	Stable under normal conditions.
Conditions to avoid	Prevent from freezing.
Incompatible Materials	No materials to be especially mentioned.
Hazardous Decomposition Products	None under normal use.
Possibility of hazardous reactions	None under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Product Information
Information on likely routes of exposure

Principal Routes of Exposure Eye contact, skin contact and inhalation.

Acute Toxicity

Product Information No information available

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available

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

Eye contact May cause slight irritation
Skin contact Substance may cause slight skin irritation. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation May cause irritation of respiratory tract.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Sensitization No information available.
Neurological Effects No information available.
Mutagenic Effects No information available.
Reproductive Effects Possible risk of impaired fertility. Possible risk of harm to the unborn child.
Developmental Effects No information available.
Target organ effects No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Other adverse effects No information available.
Aspiration Hazard No information available.

Numerical measures of toxicity

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

ATEmix (oral) 57458 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)	-	-
Kaolin, calcined 92704-41-1	> 2000 mg/kg (Rat)	-	-
Trimethylolpropane 77-99-6	= 14100 mg/kg (Rat) = 14000 mg/kg (Rat)	-	> 0.29 mg/L (Rat) 4 h

Carcinogenicity

The information below indicates whether each agency has listed any ingredient as a carcinogen:.

Chemical name	IARC	NTP	OSHA
Titanium dioxide	2B - Possible Human Carcinogen		Listed

Although IARC has classified titanium dioxide as possibly carcinogenic to humans (2B), their summary concludes: "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as paint."

Legend
IARC - International Agency for Research on Cancer
NTP - National Toxicity Program
OSHA - Occupational Safety & Health Administration

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects
The environmental impact of this product has not been fully investigated.

Product Information

Acute Toxicity to Fish
No information available

Acute Toxicity to Aquatic Invertebrates
No information available

Acute Toxicity to Aquatic Plants
No information available

Persistence / Degradability
No information available.

Bioaccumulation
There is no data for this product.

Mobility in Environmental Media
No information available.

Ozone
No information available

Component Information

Acute Toxicity to Fish

Titanium dioxide
LC50: > 1000 mg/L (Fathead Minnow - 96 hr.)

Acute Toxicity to Aquatic Invertebrates
No information available

Acute Toxicity to Aquatic Plants
No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Dispose of in accordance with federal, state, provincial, and local regulations. Local requirements may vary, consult your sanitation department or state-designated environmental protection agency for more disposal options.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

ICAO / IATA Not regulated

IMDG / IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA: United States	Yes - All components are listed or exempt.
DSL: Canada	Yes - All components are listed or exempt.

Federal Regulations

SARA 311/312 hazardous categorization

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

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

None

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

None

US State Regulations

California Proposition 65

WARNING: Cancer and Reproductive Harm– www.P65warnings.ca.gov

State Right-to-Know

Chemical name	Massachusetts	New Jersey	Pennsylvania
Titanium dioxide	X	X	X
Limestone	X	X	X

Legend
X - Listed

National Pollutant Release Inventory (NPRI)

NPRI Parts 1- 4
This product contains the following Parts 1-4 NPRI chemicals:

None

NPRI Part 5
This product contains the following NPRI Part 5 Chemicals:

None

WHMIS Regulatory Status

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

16. OTHER INFORMATION

HMIS - **Health:** 2* **Flammability:** 0 **Reactivity:** 0 **PPE:** -

HMIS Legend
0 - Minimal Hazard
1 - Slight Hazard
2 - Moderate Hazard
3 - Serious Hazard
4 - Severe Hazard
* - Chronic Hazard
X - Consult your supervisor or S.O.P. for "Special" handling instructions.
Note: The PPE rating has intentionally been left blank. Choose appropriate PPE that will protect employees from the hazards the material will present under the actual normal conditions of use.

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 MSDSs under 29 CFR 1910.1200, the preparer, has chosen to provide them. HMIS® ratings are to be used only in conjunction with a fully implemented HMIS® program by workers who have received appropriate HMIS® training. HMIS® is a registered trade and service mark of the NPCA. HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

WARNING! If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN.

PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead.

Prepared By	Product Stewardship Department Benjamin Moore & Co. 101 Paragon Drive Montvale, NJ 07645 800-225-5554
Revision Date:	11-Dec-2020
Reason for revision	Not available

Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information 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 determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, provincial, and local laws and regulations.

End of Safety Data Sheet

Section 1 Chemical Product and Company Information

ward's science
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.

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 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.
Odor: Odor of benzaldehyde or benzoin.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 121°C (249°F)
Boiling point: 249°C (480°F)
Flash point: 121-131°C (249-267°F) CC

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): 1 mm @ 96° (sublimes)
Vapor density (Air = 1): 4.21
Relative density (Specific gravity): 1.321
Solubility(ies): Slightly soluble in water (0.34 g/100ml)

Partition coefficient: Data not available
Auto-ignition temperature: 573°C (1065°F)
Decomposition temperature: Data not available.
Viscosity: Data not available.
Molecular formula: C_6H_5COOH
Molecular weight: 122.12

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, alkalies.
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
Carcinogenity: 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 irritaiton 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	CERLCA (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.

Revision Date: June 7, 2013 **Supercedes:** November 23, 2011

L-132 BERKLEY & JENSEN ANTIBACTERIAL LIQUID HAND SOAP **Safety Data Sheet**

Henkel

Revision Number: 035.0 **Issue Date:** 08/06/2014

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product identifier used on the label:

Dial® Antibacterial Hand Soap – Mountain Fresh, Spring Water, Pomegranate and Tangerine, Gold, Aloe
Dial® Antibacterial Hand Soap – White Tea & Vitamin E (Fresh Snow)
Berkley & Jensen® Antibacterial Liquid Hand Soap
Dial® Antibacterial Hand Soap – Hello Kitty
Dial® Seasonals Collection Antibacterial Liquid Hand Soap – Blackberry & Coriander, Red Grapes & Mint, Cranberry & Fig, Spiced Apple & Pear, Tropical Bloom, Fruit Splash, Exotic Escape, Refreshing Escape
Dial® Skin Therapy Antibacterial Liquid Hand Soap - Himalayan Pink Salt
Dial® Lavender & Twilight Jasmine Antibacterial Liquid Hand Soap
Dial® Gold Antibacterial Hand Soap – Professional
Liquid Dial® with Moisturizers
Liquid Dial® Sensitive Skin

Other means of identification:

714729, 1631912 (Mountain Fresh); 1533782, 714757, 1631890, 1763465 (Spring Water); 1112000, 1151446, 1631899 (Pomegranate and Tangerine); 1198192, 1305319, 1632015, 1679927 (Gold); 1198180, 1305318, 1632019, 1661407, 1679939, 1763472 (Aloe); 1362663, 1631897 (White Tea & Vitamin E, Fresh Snow); 1365866 (Berkley & Jensen); 1605423, 1606021, 1631872 (Hello Kitty); 1693185 (SC Blackberry & Coriander), 1693201 (SC Red Grapes & Mint), 1713197 (SC Cranberry & Fig); 1713166 (SC Spiced Apple & Pear); 1742158 (SC Tropical Bloom); 1729985 (SC Fruit Splash); 1802082 (Exotic Escape); 1802073 (Refreshing Escape); 1715643 (Skin Therapy - Himalayan Pink Salt), 1778120 (Lavender & Twilight Jasmine); 1679927 (Professional); 1756809 (w/Moisturizers); 1756400 (Sensitive Skin)

Recommended use of the chemical and restrictions on use:

Liquid Antibacterial Hand Soap; No restrictions on use

Name, address and telephone number of the chemical manufacturer:

The Dial Corporation, a Henkel Company
7201 E. Henkel Way
Scottsdale, AZ 85255-9672 USA

CHEMTREC: 1-800-424-9300 (24 hours daily)
Internet: www.henkelna.com

Emergency telephone number: Medical Emergencies: 1-888-689-9082

2. HAZARD IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of §1910.1200

HAZARD CLASS	HAZARD CATEGORY
ACUTE HAZARDS TO THE AQUATIC ENVIRONMENT	3
CHRONIC HAZARDS TO THE AQUATIC ENVIRONMENT	3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Signal word: Not prescribed
Hazard Statement(s): Harmful to aquatic life with long lasting effects.
Symbol(s): None

Precautionary Statements:
Prevention: Avoid release to the environment.
Response: Not prescribed
Storage: Not prescribed
Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Hazards not otherwise classified: Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

The following chemicals are classified as health hazards in accordance with paragraph (d) of § 1910.1200.

Chemical Name*	CAS Number (Unique Identifier)	Concentration	Classification §1910.1200
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	68585-34-2	5 – 10 %	Eye irritation 2A Skin irritation 2 Chronic hazards to the aquatic environment 3
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0	1 – 5 %	Eye irritation 2A Skin irritation 2 Skin Sensitization 1 Chronic hazards to the aquatic environment 3

*The specific chemical identity and/or exact percentage (concentration) of composition has been withheld because a trade secret is claimed in accordance with paragraph (i) of §1910.1200.

4. FIRST AID MEASURES

Description of necessary measures

Inhalation: Remove from exposure area to fresh air. Treat symptomatically and supportively. If any symptoms appear, get medical attention.
Skin contact: Rinse affected area with large amounts of mild soap and water until no evidence of product remains. Discontinue exposure. Get medical attention if irritation persists.
Eye contact: Rinse eyes with plenty of water until no evidence of product remains. Get medical attention if pain or irritation develops.
Ingestion: Dilution by rinsing the mouth and giving water or milk to drink is generally recommended. Contact physician or local poison control center.

Most important symptoms and effects, both acute and delayed

After eye contact: May cause mild transient irritation After skin contact: Repeated or prolonged excessive exposure may cause irritation or dermatitis. After ingestion: Nausea and possible vomiting may occur. After inhalation: Unlikely to occur due to the physical properties of the product. At elevated temperatures, vapors or mists may cause irritation.

Indication of any immediate medical attention and special treatment needed

After eye contact: Rinse eyes with plenty of water until no evidence of product remains. After skin contact: Rinse affected area with mild soap and water until no evidence of product remains. After ingestion: Dilution by rinsing the mouth and giving a glass of water to drink is generally recommended. After inhalation: Remove from exposure area to fresh air.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Dry chemical, carbon dioxide, water spray or regular foam.
Unsuitable extinguishing media: None known

Specific hazards arising from the chemical

Oxides of carbon and oxides of nitrogen.

Special protective equipment and precautions for fire-fighters

In case of fire, wear a full-face positive-pressure self-contained breathing apparatus and protective suit. Shut off all ignition sources. Move containers from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Use flooding amounts of water as a fog, solid streams may be ineffective. Avoid breathing hazardous vapors, keep upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear skin, eye and respiratory protection as recommended in Section 8. Stop or reduce any leaks if it is safe to do so. Spills present a slipping hazard. Keep unnecessary personnel away. Ventilate spill area if possible. Make sure area is slip-free before re-opening to traffic.

Environmental Precautions

Small or household quantities may be disposed in sewer or other liquid waste system. For larger quantities check with your local water treatment plant.

Methods and materials for containment and cleaning up

SMALL SPILLS: Contain and absorb with absorbent material and place into containers for later disposal. Wash site of spillage thoroughly with water.
LARGE SPILLS: Dike far ahead of spill to prevent further movement. Recover by pumping or by using a suitable absorbent material and place into containers for later disposal. Dispose in suitable waste container.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not get in eyes. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists.

Conditions for safe storage, including any incompatibilities

Store in original containers in a cool dry area. Storage areas for large quantities (warehouse) should be well ventilated. Keep the containers tightly closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

Hazardous Component(s)	ACGIH	OSHA PEL	AIHA WEEL	OTHER
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	None	None	None	None

Appropriate engineering controls
Provide local exhaust or general dilution ventilation to keep exposure to airborne contaminants below the permissible exposure limits where mists or vapors may be generated.

Individual protection measures

Respiratory: Air contamination monitoring should be carried out where mists or vapors are likely to be generated, to assure that the employees are not exposed to airborne contaminants above the permissible exposure limits.

Eye: Safety glasses are required to prevent eye contact where dusty conditions may occur.

Hand/Body: Protective gloves are required where repeated or prolonged skin contact may occur.
Protective clothing is required where repeated or prolonged skin contact may occur.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	liquid, colorless
Odor:	citric, green, fresh
Odor threshold:	Not available.
pH:	5.20 - 6.20 (25 °C)
Melting point/ range:	Not available.
Boiling point/range:	Not available.
Flash point:	> 93.3 °C (> 199.94 °F)
Evaporation rate:	Not available.
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Solubility in water:	Soluble
Partition coefficient (n-octanol/water):	Not available.
Autoignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
VOC content:	Not available.
Specific gravity:	1.024 at 20 °C (68°F)

10. STABILITY AND REACTIVITY

Reactivity: This product may react with strong alkalies.

Chemical stability: Stable under normal ambient temperature (70°F, 21°C) and pressure (1 atm).

Possibility of hazardous reactions: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

Conditions to avoid: Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials: Strong oxidizers and alkalis.

Hazardous decomposition products: Thermal decomposition may release toxic and/or hazardous gases, including ammonia.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure including symptoms related to characteristics

Inhalation: Unlikely to occur due to the physical properties of the product. At elevated temperatures, vapors or mists may cause irritation.
Skin contact: Repeated or prolonged excessive exposure may cause irritation or dermatitis.
Eye contact: This product may cause slight irritation.
Ingestion: May cause mild gastrointestinal irritation with nausea, vomiting, diarrhea and abdominal pain.
Physical/Chemical: No physical/chemical hazards are anticipated for this product.

Other relevant toxicity information:
This product is a personal care or cosmetic product. Direct contact with eyes may cause irritation. No adverse effects are anticipated to skin from normal use.

Numerical measures of toxicity, including delayed and immediate effect

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	None	Irritant
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	None	Irritant, Allergen

Carcinogenicity information

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	No	No	No
1-Propanaminium, 3-amino-N- (carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	No	No	No

Carcinogenicity None of the ingredients in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA).
Mutagenicity None of the ingredients in this product are known to cause mutagenicity.
Toxicity to reproduction None of the ingredients in this product are known to have reproductive, fetal, or developmental hazards.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:
This product is anticipated to be safe for the environment at concentrations predicted in household settings under normal use conditions. The following toxicity information is available for the hazardous ingredient(s) when used as technical grade and is provided as reference for the occupational settings.

Toxicity to fish:

Hazardous substances	Value type	Value	Acute toxicity study	Exposure time	Species	Method
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	LC50	4.9 mg/l	Fish	96 h	Salmo sp.	OECD 203
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,Ndimethyl-,N-coco acyl derivs., hydroxides, inner Salts	LC50 NOEC	6.7 mg/l 0.135 mg/l	Fish Fish	96 h 100 d	Danio rerio Oncorhynchus mykiss	ISO 7346-1 OECD 210

Toxicity to aquatic invertebrates:

Hazardous substances	Value type	Value	Acute toxicity study	Exposure time	Species	Method
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	EC50	3.1 mg/l	Daphnia	48 h	Daphnia magna	OECD 202
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,Ndimethyl-,N-coco acyl derivs., hydroxides, inner Salts	EC50	3.7 mg/l	Daphnia	24 h	Daphnia magna	OECD 202

Toxicity to algae:

Hazardous substances	Value type	Value	Acute toxicity study	Exposure time	Species	Method
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	EC50	2.5 mg/l	Algae	95 h	Selenastrum capricornutum	OECD 201
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,Ndimethyl-,N-coco acyl derivs., hydroxides, inner Salts	EC50	2.6 mg/l	Algae	96 h	Scenedesmus subspicatus	OECD 201

Persistence and Degradability: The persistence and degradability of this product has not been determined. The hazardous ingredients are readily biodegradable.

Hazardous substances	Result value	Route of application	Species	Method
Alcohols, C10-16, ethoxylated, sulfates, sodium salts, 2EO	Readily biodegradable	aerobic	80 – 83 %	OECD 301 B (CO2 evolution)
1-Propanaminium, 3-amino-N-(carboxymethyl)-N,Ndimethyl-,N-coco acyl derivs., hydroxides, inner Salts	Readily biodegradable	aerobic	86 %	OECD 301 D (closed bottle)

Bioaccumulation Potential: The bioaccumulation potential of this product has not been determined.

Mobility: The mobility of this product (in soil and water) has not been determined.

13. DISPOSAL CONSIDERATIONS

Waste Number and Description: Not applicable, not regulated.

Disposal Considerations:

Disposal of products: This product is not a RCRA hazardous waste and can be disposed of in accordance with federal, state and local regulations.

Disposal of packages: Place in trash.

Additional information: Observe all federal, state and local regulations when storing or disposing of this substance

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Environmentally hazardous substance, liquid, N.O.S. (Triclosan)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)

Proper shipping name: Environmentally hazardous substance, liquid, N.O.S. (Triclosan)
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Marine pollutant: Triclosan

15. REGULATORY INFORMATION

Occupational Safety and Health Act: Hazard Communication Rule, 29 CFR 1910.1200: The Occupational Safety and Health Administration (OSHA) require Material Safety Data Sheets (MSDSs) to provide information about any hazard that may be associated with the product and make this information available in the workplace. Since the use pattern and exposure in the workplace are generally not consistent with those experienced by consumers, this MSDS may contain health hazard information not relevant to consumer use.

United States Regulatory Information:

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis
CERCLA/SARA Section 302 EHS: The following components are subject to reporting levels established by SARA Title III, Section 302: Formaldehyde (CAS# 50-00-0).
CERCLA/SARA Section 311/312: Not available.
CERCLA/SARA Section 313: None above reporting de minimis
California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information:

CEPA DSL/NDSL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.

16. OTHER INFORMATION

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: R&D Support Services

Issue date: 08/06/2014 **Supercedes:** Rev. 34, 04/07/2014

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

1. IDENTIFICATION

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

2. HAZARDS IDENTIFICATION

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

Fire
In 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.

3. COMPOSITION/INFORMATION ON 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

4. 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.

5. FIREFIGHTING MEASURES

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.

6. ACCIDENTAL RELEASE MEASURES

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.

7. HANDLING AND STORAGE

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/PERSONAL 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	**Odor**	Pleasant
Color	No information available	**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	

10. STABILITY AND REACTIVITY

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.

11. TOXICOLOGICAL INFORMATION

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

12 ECOLOGICAL 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.

13 DISPOSAL 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

14 TRANSPORT INFORMATION

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

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

15 REGULATORY INFORMATION

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
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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: Product and company identification

Product name	:	Bio-Action®
Use of the substance/mixture	:	Drain maintainer Bacterial digestant
Product code	:	0528
Company	:	Total Solutions P.O. Box 240014 Milwaukee, WI 53224 - USA T (414) 354-6417
Emergency number	:	Chemtrec: (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2 H319
Resp. Sens. 1 H334

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Causes serious eye irritation
May cause an allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements (GHS-US) : Avoid breathing spray, mist.
Wash thoroughly after handling
Wear eye protection, protective clothing, protective gloves.
In case of inadequate ventilation wear respiratory protection..
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing
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 advice/attention.
If experiencing respiratory symptoms: Call a doctor
Dispose of contents/container to comply with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Linear Alcohol Ethoxylate	(CAS-No.) 34398-01-1	1-5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
subtilisin	(CAS-No.) 9014-01-1	0.05 - 0.4	Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 STOT SE 3, H335

A specific chemical identity and/or percentage of composition has been withheld as a trade secret. Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after 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 advice/attention.

First-aid measures after ingestion : Rinse mouth with water. Do NOT induce vomiting.

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

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/effects after inhalation : May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Contact during a long period may cause slight irritation.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : Gastrointestinal complaints.

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 : Adapt extinguishing media to the environment.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Take account of environmentally hazardous firefighting water.

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

General measures : Isolate from fire, if possible, without unnecessary risk.

6.1.1. For non-emergency personnel

Protective equipment : Protective goggles. Gloves. Protective clothing.

Emergency procedures : Evacuate unnecessary personnel. Avoid contact with skin, eyes and clothing. Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Use personal protective equipment as required.

Emergency procedures : Stop leak if safe to do so. Stop release. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers.

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep container tightly closed.

Hygiene measures : Wash thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep container closed when not in use.

Incompatible products : Strong acids.

Storage area : Meet the legal requirements. Store in a cool area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

subtilisin (9014-01-1)		
ACGIH	ACGIH Ceiling (mg/m³)	0.00006 mg/m³

Linear Alcohol Ethoxylate (34398-01-1)
Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Use appropriate personal protective equipment when risk assessment indicates this is necessary. Gloves. Protective clothing. Safety glasses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Green, Thickened liquid.
Odor	: Citrus fruits
Odor threshold	: No data available
pH	: 6 – 8
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 200 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 1.03 g/ml
Solubility	: Soluble in water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
VOC content	: < 0.5 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Linear Alcohol Ethoxylate (34398-01-1)	
LD50 oral rat	> 1400 mg/kg

Skin corrosion/irritation : Not classified
pH: 6 - 8

Serious eye damage/irritation : Causes serious eye irritation.
pH: 6 - 8

Respiratory or skin sensitization : May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

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

Symptoms/effects after inhalation : May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Contact during a long period may cause slight irritation.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : Gastrointestinal complaints.

Likely routes of exposure : Skin and eye contact

SECTION 12: Ecological information

12.1. Toxicity

Linear Alcohol Ethoxylate (34398-01-1)	
LC50 fish 1	< 10 mg/l
EC50 Daphnia 1	< 10 mg/l
ErC50 (algae)	< 10 mg/l

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT : Not regulated for transport

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Linear Alcohol Ethoxylate (34398-01-1)	

Linear Alcohol Ethoxylate (34398-01-1)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

⚠ WARNING This product can expose you to ethyl acrylate, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

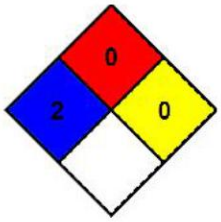
Full text of H-phrases:

H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Prepared by: Technical Department

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. No warranty is expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Our company assumes no responsibility for personal injury or property damage to the vendee, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of this material.

Sheet No. 1650 Revision Date: 11 January 2019

SAFETY DATA SHEET

HMIS:
Health- 1 Flammability- 1 Reactivity- 0 Pers. Protection- N

NFPA:
Health- 1 Flammability- 1 Reactivity- 0 Special Hazard- N

WHMIS: B 3, D 2 B

Section 1: Product and Company Identification

Product: Bio-Enzymatic Urine Digester, All Fragrances

Synonyms: Bacteria/Enzyme, All fragrances

NILODOR, INC.
10966 INDUSTRIAL PARKWAY NW
BOLIVAR, OHIO 44612, USA

Non-Emergency:
US 800-443-4321
International +01-330-874-1017

24 hr Emergency Spill Information:
Chem-Tel, Inc.
US, Canada: 800-255-3924. International: +01-813-248-0585

Section 2. Hazards Identification

EMERGENCY OVERVIEW

Appearance/Odor: Opaque white liquid, aroma dependent on description

WARNING

Flammability : Not classified as flammable

Health Hazards Listed : Not applicable

Ecological Hazards Listed : None known

Potential Health Effects: See section 11 for more information.

Risk Phrases:
R36/37/38 - Irritating to eyes, respiratory system and skin
R20 - Harmful by inhalation
R22 - Harmful if swallowed

Safety Phrases:
S2 - Keep out of the reach of children
S13 - Keep away from food, drink and animal feedingstuffs
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

Hazard Phrases: H335 - May cause respiratory irritation

Precautionary P202 - Do not handle until all safety precautions have been read and understood.

Phrases: P264 - Wash thoroughly after handling.
P234 - Keep only in original container.

Likely Routes of Exposure: Not applicable

Eye:	Direct exposure can irritate
Skin:	Prolonged exposure can irritate
Ingestion:	Not expected to be a problem
Inhalation:	Not applicable

Medical Conditions Aggravated By Exposure:

Allergies to fragrances

Target Organs: None known

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Potential Environmental Effects: (See section 12 for more information.)

None known

Section 3. Composition/Information on Ingredients

Component	CAS#	% by Weight	WHMIS Controlled
Styrene Copolymer Emulsion Opacifier	NA	0.1 - 1.0	N
Water	7732-18-5	80 - 100	N
Bacteria Culture	none	3.0-5.0	N
Non-ionic Surfactant	NA	3-5	Y
Trade Secret Fragrance Mixture		0.1-0.7	N

Section 4. First Aid Measures

Eye Contact:	Flush eyes with copious amounts of clean water, holding lids apart. If irritation persists, consult a physician.
Skin Contact:	Wash with soap and water.
Inhalation:	Remove to fresh air.
Ingestion:	Give water or milk to drink if conscious.
Note to Physicians:	DO NOT INDUCE

Section 5. Fire Fighting Measures

Suitable Extinguishing Media:	Water
Unsuitable Extinguishing Media:	None known
Products of Combustion:	Oxides of carbon and nitrogen
Protection of Firefighters:	As for surrounding fire

Section 6. Accidental Release Measures

Personal Precautions:	Avoid contact with eyes and skin
Environmental Precautions:	Keep out of surface waters
Methods for Containment:	Dike with sand, clay or other suitable material
Methods for Clean-Up:	Absorb on sand, clay or other suitable material or mop up with water.

Other Information:

Section 7. Handling and Storage

HANDLING

Normal care. Keep closed when not in use. Keep out of reach of children.

STORAGE

Keep in room temperature avoid freezing and extreme temperatures over 120 F

Section 8. Exposure Controls/Personal Protection

EXPOSURE GUIDELINES

COMPONENT:	TWA:	LD-50
Styrene Copolymer Emulsion Opacifier	None established	Not determined
Water	None established	Not determined
Bacteria Culture	None established	Not determined
Non-ionic Surfactant	NA	NA
Trade Secret Fragrance Mixture	None established	Not determined

Engineering Controls: Not normally necessary

Eye/Face Protection: Protective goggles if handling large quantities

Skin Protection: Rubber or other protective gloves if handling large quantities

Respiratory Protection: Not normally necessary

General Hygiene Considerations: Reasonable care. Keep out of food and beverages

Section 9. Physical and Chemical Properties

Color: White, opaque	Odor: Aroma dependent on description.
Physical State: Liquid	Odor Treshhold:
pH: 6.5 - 8.5	Freezing Point: Not determined
Evaporation Rate: As water	Boiling Point: > 100 C / > 212 F
Flash Point: >205 F PMCC	Flammability(solid,gas): Not applicable
Upper Flammability Limit: Not determined	Lower Flammabilty Limit: Not determined
Vapor Pressure: As water	Specific Gravity: 0.99-1.02
Vapor Density: Not determined	Auto-ignition Temperature: Not determined
Volatile Organic Compound (VOC),%weight:	Solubility (water): Soluble
CARB Compliant	Percent Volatile: More than 95% including water

Section 10. Stability and Reactivity

Stability: Stable

Conditions to Avoid: None known

Incompatable Materials: None known

Hazardous Decomposition Products: None known

Possibility of Hazardous Reactions: Extremely unlikely

Section 11. Toxicology Information

ACCUTE EFFECTS

Oral LD50:	Not evaluated as a mixture.
Dermal LD50:	Not determined for mixture.
Inhalation:	Not determined. No significant concentration of any toxic volatile substances.
Eye Irritation:	Direct contact can irritate eyes.
Skin Irritation:	Prolonged or repeated contact can irritate skin.

Sensitization: None known

CHRONIC EFFECTS

Carcinogenicity: None known

Mutagenicity: None known

Reproductive Effects: None known

Developmental Effects: None known

Section 12. Ecological Information

Ecotoxicity: Not applicable

Persistence/Degradability: Biodegradable

Bioaccumulation/Accumulation: Not applicable

Mobility in Enviroment: Not applicable

Section 13. Disposal Considerations

Disposal: Dispose in accordance with Federal, State or Provincial, and Local regulations

Section 14. Transportation Information

US DOT (ground)

Proper Shipping Description: Not a Hazardous Material

CANADA TDG (ground)

Proper Shipping Description: Not a Dangerous Good

ICAO (air)

Proper Shipping Description: Not a Dangerous Good

IMDG (water)

Proper Shipping Description: Not a Dangerous Good

Section 15. Regulatory Information

Global Inventories

TSCA: United States	Included
DSL: Canada	Included
ECL: Korea	Not-Known
PICCS: Philippines	Not-Known
ENCS: Japan	Not-Known
AICS: Australia	Included
IECS: China	Not-Known
EINECS: European Union	Included

SARA 313 Information : No SARA 313 chemicals present at reportable levels

California Safe Drinking Water and Toxic Enforcement Act pf 1986 :(Proposition 65)

No Proposition 65 substances present

WHMIS: Canadian Workplace Hazardous Material Information System

B 3, D 2 B

Section 16. Other Information

Legends:

NFPA, HMIS:

0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Severe Hazard, 4=Extreme Hazard

Prepared By: Technical Dept.

While we believe that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation for which we assume legal responsibility. The information is offered solely for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state and local laws.

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 INDENTIFICATION

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

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS#	Wt %	TLV	LC_{50}	LD_{50}
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

THYMOX TECHNOLOGY

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).

ThermoFisher
SCIENTIFIC

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 limitsestablished 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

SAFETY DATA SHEET **SDS No.: BB0150** **CORROSIVE STORAGE CODE WHITE**

Section 1 Chemical Product and Company Information

ward's science
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.
Odor: No odor.
Odor threshold: Not applicable.
pH: Data not available.
Melting / Freezing point: ~ 0°C (~ 32°F) [water]
Boiling point: ~ 100°C (212°F) [water]
Flash point: Not flammable.

Evaporation rate (Water = 1): < 1
Flammability (solid/gas): Not applicable.
Explosion limits: Lower / Upper: Not applicable
Vapor pressure (mm Hg): 14 [water]
Vapor density (Air = 1): 0.7 [water]
Relative density (Specific gravity): 1.0 [water]
Solubility(ies): Complete in water.

Partition coefficient: (n-octanol / water): Not applicable
Auto-ignition temperature: Not applicable
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: 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
Carcinogenity: 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	CERLCA (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 **Supercedes:** 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

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
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
AUTOIGNITION TEMPERATURE: 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

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: 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

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 : Danger

Hazard statements : 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/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.
Propane	**NIOSH REL (United States, 10/2013).** TWA: 1000 ppm 10 hours. TWA: 1800 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 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/m³	4 hours
	LD50 Oral	Rat	7 g/kg	-
Ethyl Acetate	LD50 Oral	Rat	5620 mg/kg	-
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m³	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	-	0.066666667 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.	96 hours
	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	**Special provisions** LIMITED QUANTITY	**Special provisions** LIMITED QUANTITY	**Special provisions** (ERG#126)	**Special provisions** LIMITED QUANTITY	**Emergency schedules (EmS)** 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.)

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., Rennaisance 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
AUTOIGNITION TEMPERATURE: 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

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
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: 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 150014), 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)
VERMILION 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
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

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 acides will cause coagulation
Hazardous Decomposition:	Oxides of carbon
Hazardous Polymerization:	Will not occur

SAFETY DATA SHEET

SDS #: 559

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

0=Minimal / 4 = Severe

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.

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

Hazardous Ingredients	CAS/EC #	PEL/TLV (MG/M#)	Max % Weight	NTP	IARC
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
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 CHARTREUESE		(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)

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)
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

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

Chemical Name	CAS #	%
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

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. 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

	ACGIH		OSHA PEL	
Chemical Name	(TWA)	(STEL)	(TWA)	(STEL)
Ethanol	N/A	1000 ppm STEL	1000 ppm TWA; 1900 mg/m3 TWA	N/A
2-Propanol	200 ppm TWA	400 ppm STEL	400 ppm TWA; 980 mg/m3 TWA	N/A
Methanol	200 ppm TWA	250 ppm STEL	200 ppm TWA; 260 mg/m3 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

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 Inhaltion and skin contact.
Symptoms (Acute): Respiratory Irritation, Dermititis, 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.

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 48 HR LC50 DAPHNIA MAGNA 9268 - 14221 MG/L
2-Propanol	67-63-0	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

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

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

UNIVERSITY PRODUCTS

*** SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name / Number: BBH PVA ADHESIVES/ BBHM207, BBHM217, BBHM227, and BBHM307

Product Description: Ethylene Vinyl Acetate BOOKS BY HAND PH NEUTRAL PVA ADHESIVE

Company Information:

UNIVERSITY PRODUCTS/LINECO
517 Main Street, PO Box 101
Holyoke, MA 01040
Phone: (413) 532-3372

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: No Specific warnings for normal use conditions.

POTENTIAL HEALTH EFFECTS:

EYES: Eye contact with liquid product may cause irritation.

SKIN: Prolonged or repeated contact with liquid product may cause irritation.

INHALATION: Inhalation is not an anticipated route of exposure.

INGESTION: Not an anticipated route of exposure. Small amounts are not anticipated to be harmful.

CHRONIC: No anticipated chronic effects.

REGULATED CARCINOGEN STATUS: This product does not contain regulated levels of NTP, IARC, ACGIH or OSHA listed carcinogens.

EXSISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: No known effects on other illnesses.

3. COMPOSITION / INFORMATION ON INGREDIENTS

This SDS is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS). Unlisted ingredients are not “hazardous” per the OSHA standard and/or are not found on the WHMIS ingredient disclosure list.

HAZARDOUS COMPONENTS (Specific Chemical Identity; Common Name)	CAS NO.	% (Optional)

**NO REPORTABLE QUANTITIES OF INGREDIENTS ARE PRESENT
**No toxic chemicals subject to the reporting requirements of Section 313 of Title III and/ or CFR 372 are present. (See Section 16 for additional information.)

4. FIRST AID MEASURES

IF IN EYE: Flush immediately with water for 20 minutes. Consult a physician if irritation persists.

IF ON SKIN: Wash affected area with soap and water. Launder contaminated clothing before reuse.

IF VAPORS INHALED: Remove subject to fresh air.

IF INGESTED: If person can swallow, give one glass of water or milk. Do not induce vomiting. Get immediate medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

FLASH POINT / METHOD: Non-flammable

UPPER EXPLOSIVE LIMIT / LOWER EXPLOSIVE LIMIT: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

APPROPRIATE EXTINGUISHERS: Non-flammable in liquid state; use water spray or chemical foam

SPECIAL FIRE FIGHTING PROCEDURES: Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

UNUSUAL FIRE and EXPLOSION HAZARDS: None

HAZARDOUS COMBUSTION PRODUCT: Incomplete combustion can yield low molecular weight hydrocarbons, carbon monoxide.

6. ACCIDENTIAL RELEASE MEAURES

SPILL or LEAK PROCEDURES: Contain spill in as small of an area as possible. Soak up on neutral floor absorbent and shovel into drums for disposal. Follow local codes for waste disposal.

7. HANDLING and STORAGE

HANDLING INFORMATION:

Wear appropriate protective equipment when working with this product.

STORAGE INFORMATION:

For industrial use only; Store in cool, dry area. Keep containers closed and out of reach of children. Containers when emptied, may be hazardous. Use caution and do not reuse.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses to reduce the potential for eye contact; chemical safety goggles are appropriate if splashing or dusting is likely. Have eye washes available where eye contact can occur.

SKIN PROTECTION: Prevent prolonged or repeated contact by using rubber gloves and appropriate protective clothing. Launder contaminated clothing before reuse.

RESPIRATORY PROTECTION: Not normally required. Use NIOSH/MSHA approved respirator if conditions warrant.

VENTILATION: General dilution ventilation.

9. PHYSICAL and CHEMICAL PROPERTIES

Chemical Composition…… Ethylene Vinyl Acetate, CAS# 24937-78-8
Physical State: ……..….. Liquid
Volatile Organic Compound (VOC)..……..Est. to be <0.009 lbs/gal
Color: ……..…….. White
Odor: …… Slight, sweet odor
Odor Threshold: ……..… Not established
Specific Gravity: ……..…… 1.05-1.15
% Solids by Weight …… 58.0-62.0%
pH: ……..……. 7.0-9.0
Boiling Range: ……..…… Greater than 212°F

Freezing / Melting Point: …… Of water
Vapor Pressure: …… …. Of water
Vapor Density: …… Of water
Evaporation Rate: …….. Of water
Water / Oil Partition Coefficient: …….. Not established

10. STABILITY and REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY: Do not contact strong acids or oxidizer

HAZARDOUS DECOMPOSITION: Carbon Monoxide and carbon dioxide

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

No Data Available

12. ECOLOGICAL INFORMATION

No Data Available

13. DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Dispose of in an approved landfill. Consult the state, local or provincial authorities and your local waste vendor for more restrictive requirements.

14. TRANSPORTATION INFORMATION

UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT)
DOT Proper Shipping Name: Not regulated

It is our opinion that the information provided here may be used to transport this product in compliance with Canadian Transportation of Dangerous Goods.

15. REGULATORY INFORMATION

FEDERAL:

Toxic Substances Control Act (TSCA)
Section 8 (b) – Inventory Status
This product is in compliance with the Toxic Substances Control Act's Inventory requirements

.

SARA TITLE III
Section 313

This product does not contain regulated levels of any toxic chemical subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372.

STATE REGULATIONS:

California Proposition 65: Proposition 65,The Safe Drinking Water and Toxic Enforcement Act of 1986:

This products does not contain known levels of any chemical known to the state of California to cause cancer or cause reproductive damage.

WHMIS IDENTIFICATION / OTHER INTERNATIONAL REGULATIONS:

Not regulated

16. ADDITIONAL INFORMATION

This product contains the following substance(s) identified by OSHA, WHMIS, or the ACGIH as hazardous. During normal use, the material will not present an exposure risk. Once the product has reached its final state and is abraded or distributed, dusting and exposure may occur.

NO REPORTABLE QUANTITIES OF INGREDIENTS ARE PRESENT
NO toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of CFR 372 are present

HMIS RATING:

HEALTH - 1 FLAMMABILITY – 0 REACTIVITY – 0 PERSONAL PROTECTION- B

See Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION for personal protective equipment recommendations.

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Pioneer Adhesive Products and University Products from their suppliers, and because Pioneer Adhesive Products and University Products have no control over the conditions of handling and use, Pioneer Adhesive Products and University Products make no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Pioneer Adhesive Products and University Products assume no responsibility for the use or reliance thereon.

It is the responsibility of the user of Pioneer Adhesive Products and University Products products to comply with all applicable federal, state and local laws and regulations.

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	$Na_2B_4O_7 \cdot 10H_2O$	381.37 g/mol
Water	99	7732-18-5	231-791-2	H_2O	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

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 (CO2) 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.

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ATEmix (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/m³ (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 SulfonateChemical 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

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

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:

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.

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.

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/cm3
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:

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:

Bromobenzene

Name	Result
Bromobenzene	LC50 - Fish - 96 H - Minimun: 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

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

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

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

New Jersey Right to Know:

108-86-1	Bromobenzene	Listed

New York Right to Know:

108-86-1	Bromobenzene	Listed

Pennsylvania Right to Know:

108-86-1	Bromobenzene	Listed

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

Initial preparation date: 11.15.2017

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_2H_5OH	46.07 g/mol
Water	Balance	7732-18-5	231-791-2	H_2O	18.00 g/mol
Bromocresol Green, Sodium Salt	<1	62625-32-5	263657-4	$C_{21}H_{13}Br_4NaO_5S$	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.

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 Oncorhynchus mykiss (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

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

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

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

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/m³
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/m³
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:

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.

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

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)

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

Bromoform

Limited quantity	2 L

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

CERCLA:

75-25-2	Bromoform	Listed	100 lbs.

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

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:	Bromthymol 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

Chemical Name	CAS #	%
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

	ACGIH		OSHA PEL	
Chemical Name	**(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).

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.

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

SDS No.: BB0220

SAFETY DATA SHEET

GENERAL STORAGE CODE GREEN

Section 1 Chemical Product and Company Information

ward's science
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, 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
Carcinogenity: 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: May 20, 2013 **Supercedes:** November 23, 2011

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 LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
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 #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

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.

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
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.

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

Appropriate engineering controls

Engineering Controls	Ensure adequate ventilation, especially in confined areas. Showers. Eyewash stations.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	White opaque solution	**Odor**	Sweet polymer scent No fragrance added
Color	White	**Odor Threshold**	Not determined

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 (NOx). 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.

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.

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.

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
Appearance Water clear liquid
Color Water clear
Odor Mild No fragrance added
Odor Threshold Not determined

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 Desmodesmus 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 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	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**	**Flammability**	**Instability**	**Special Hazards**
	3	0	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	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

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		
Appearance	Lime green solution	**Odor**	Floral
Color	Lime green	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
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

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

TSCA Listed

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**	**Flammability**	**Instability**	**Special Hazards**
	1	0	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	Not determined	Not determined	Not determined	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 SDS No.: BBB410 GENERAL STORAGE CODE GREEN

Section 1 Chemical Product and Company Information

ward's science
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 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)
	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.
Odor: No odor.
Odor threshold: Data not available.
pH: 10.0
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

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, alkalies, 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
Carcinogenity: 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	CERLCA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Potassium chloride	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 23, 2013 Supercedes: November 23, 2011

SAFETY DATA SHEET SDS No.: BB0404 GENERAL STORAGE CODE GREEN

Section 1 Chemical Product and Company Information

ward's science
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.
Odor: Vinegar-like odor.
Odor threshold: Data not available.
pH: 4.0
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

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
Carcinogenity: 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	CERLCA (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.

Revision Date: September 23, 2013 Supercedes: November 23, 2011

Safety Data Sheet

Buffer Solution pH 7

CAROLINA®
www.carolina.com

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

Chemical Name	CAS #	%
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

Chemical Name	ACGIH (TWA)	ACGIH (STEL)	OSHA PEL (TWA)	OSHA PEL (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

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	

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.

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

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	U.S. Department of Transportation
IARC	International Agency for Research on Cancer
N/A	Not Available
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
IDLH	Immediately dangerous to life and health

ward's science

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

Boreal Science
399 Vansickle Road
St. Catherines, 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	**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. [illegible] 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

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures which cause evaporation.
Incompatibilities with other materials: Acids, alkalies, 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
Carcinogenity: 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	CERLCA (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

SDS No.: BBR404 6319 **SAFETY DATA SHEET** SB49247X SB49246 SB49249 **GENERAL STORAGE CODE GREEN**

Section 1 Chemical Product and Company Information

Nasco
901 Janesville Ave
P.O. Box 901
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	247-368-0

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

	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Exposure Limits:	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.
Odor: Vinegar-like odor.
Odor threshold: Data not available.
pH: 4.0
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

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
Carcinogenity: 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	CERLCA (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.

Revision Date: September 17, 2014 Supercedes: September 23, 2013

Fisher Scientific

SAFETY DATA SHEET

Creation Date 09-Dec-2009 **Revision Date** 09-Apr-2014 **Revision Number** 1

1. Identification

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

2. Hazard(s) identification

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.

3. Composition/information on ingredients

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 No information available.
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
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	Flammability	Instability	Physical hazards
1	0	0	N/A

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/m³	(Vacated) Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Potassium hydroxide	Ceiling: 2 mg/m³		CEV: 2 mg/m³

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

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	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

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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

[redacted]

IMDG/IMO Not regulated

[redacted]

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

[redacted]

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

GHS Label Elements, including precautionary statements:

Hazard Statements:

H360	May damage fertility or the unborn child.

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_2O	18.00 g/mol
Boric Acid	<1	10043-35-3	233-139-2	H_3BO_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.

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

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 29-Jan-2010 **Revision Date** 11-May-2015 **Revision Number** 2

1. Identification

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

2. Hazards Identification

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

3. Composition/Information on Ingredients

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

[redacted]

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

[redacted]

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	Flammability	Instability	Physical hazards
	1	0	0	N/A

[redacted]

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.

[redacted]

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/m³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m³ Skin TWA: 200 ppm TWA: 260 mg/m³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Formaldehyde	Ceiling: 2 ppm Ceiling: 3 mg/m³	Ceiling: 2 ppm Ceiling: 3 mg/m³	STEL: 1.0 ppm CEV: 1.5 ppm
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m³ STEL: 250 ppm STEL: 328 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 310 mg/m³	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	Liquid
Appearance	Clear
Odor	Odorless
Odor Threshold	No information available
pH	4.0
Melting Point/Range	No data available
Boiling Point/Range	No information available
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	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

[redacted]

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.

[redacted]

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

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
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.

[redacted]

Ecotoxicity

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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

[redacted]

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	-

[redacted]

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 Depletors	Class 2 Ozone Depletors
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 **Product Code** BX1635

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.

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.

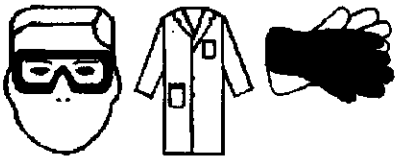
+Section 8. Exposure Controls/Personal Protection

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/IMDG 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 8(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

, Dowacide A
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: SODIUM PHOSPHATE, DIBASIC, ANHYDROUS
: Immediate (Acute) Health Hazard; Dowacide 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 classifed 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
Fire Hazard	0
Reactivity	0
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

1. Identification

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

2. Hazards Identification

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

3. Composition/Information on Ingredients

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

4. First-aid Measures

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 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
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	Flammability	Instability	Physical hazards
1	0	0	N/A

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/m³	(Vacated) Ceiling: 2 mg/m³ TWA: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Sodium hydroxide	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³	CEV: 2 mg/m³

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	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

[redacted]

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

[redacted]

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

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

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

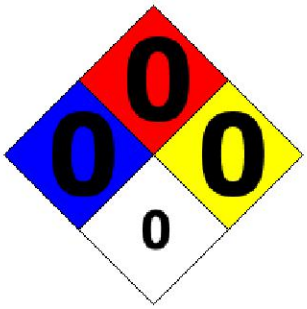
Other Non-GHS Classification:

WHMIS

B2 

D2B 

NFPA/HMIS



NFPA SCALE (0-4)

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 71-36-3	Butanol	>99 %
		Percentages are by weight

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 eyeware, 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 eyeware, 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.

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, OHSA 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.

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:

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:

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

Safety Data Sheet

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, cellosolove, 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 case 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 – Oryzias latipes – 5.3 mg/L – 48h
Aquatic Invertebrate	EC50 – Daphnia pulex – 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