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Section 1 Chemical Product and Company Identification Page E1 of E2



Aldon Corporation

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

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

Product	INDIGO CARMINE, DISODIUM SALT
Synonyms	Acid Blue 74 ; C.I. No. 73015

Section 2 Hazard Identification

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



GHS Classification:
Acute toxicity, oral (Category 4)

GHS Label information: Hazard statement(s):
H302: Harmful if swallowed.

Precautionary statement(s):
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301+P330+P312: IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
P501: Dispose of contents/container to a licensed chemical disposal agency in accordance with local/regional/national regulations.

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

Chemical Name	CAS #	%	EINECS
Indigo carmine, disodium salt	860-22-0	100%	212-728-8

INGESTION: HARMFUL BY 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: MAY BE HARMFUL IF INHALED. CAUSES 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. CAUSES SKIN IRRITATION. 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: Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

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

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

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Particulates not otherwise classified	None established	TWA: 5 mg/m ³ respirable fraction	None established

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

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

Section 9 Physical & Chemical Properties

Appearance: Solid, purple powder. Odor: No odor. Odor threshold: Data not available. pH: Data not available. Melting / Freezing point: Data not available Boiling point: Data not available Flash point: Data not available	Evaporation rate (Water = 1): Data not available Flammability (solid/gas): Data not available. Explosion limits: Lower / Upper: Data not available Vapor pressure (mm Hg): Data not available Vapor density (Air = 1): Data not available Relative density (Specific gravity): Data not available Solubility(ies): 1 g/100 ml in water.	Partition coefficient: Data not available Auto-ignition temperature: Data not available Decomposition temperature: Data not available. Viscosity: Data not available. Molecular formula: C ₁₆ H ₈ N ₂ Na ₂ O ₈ S ₂ Molecular weight: 466.36
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Section 10 Stability & Reactivity

Chemical stability: Stable
Hazardous polymerization: Will not occur.
Conditions to avoid: Excessive temperatures. Light sensitive. easily oxidized.
Incompatible materials: Strong oxidizers and water.
Hazardous decomposition products: Carbon, nitrogen, sulfur and sodium oxides.

Acute toxicity: Oral-rat LD50: 2,000 mg/kg
Skin corrosion/irritation: Data not available
Serious eye damage/irritation: Data not available
Respiratory or skin sensitization: Data not available
Germ cell mutagenicity: Data not available
Carcinogenicity: Data not available
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity: Data not available
STOT-single exposure: Data not available
STOT-repeated exposure: Data not available
Aspiration hazard: Data not available
Potential health effects:
 Inhalation: May be harmful by inhalation.
 Ingestion: Harmful by ingestion.
 Skin: Contact may cause irritation.
 Eyes: Contact 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 #: DU3000000

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
2016 ERG Guide # Not applicable

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL
Indigo carmine	Listed	Not listed	Not listed	Listed	Not listed

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

Inferno™ Snow and Ice Melter Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Revision Date: 01/05/2015

Date of issue: 12/02/2014

Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Inferno™ Snow and Ice Melter

1.2. Intended Use of the Product

Use of the Substance/Mixture: Ice melter

1.3. Name, Address, and Telephone of the Responsible Party

Company

National Ice Melt

www.nationalicemelt.com

1.4. Emergency Telephone Number

Emergency Number : 508-543-2138

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Not classified

2.2. Label Elements

GHS-US Labeling

No labeling applicable

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Product Identifier	%	Classification (GHS-US)
Sodium chloride	(CAS No) 7647-14-5	*	Not classified
Potassium Acetate	(CAS No) 127-08-2	*	Not Classified
Urea	(CAS No) 57-13-6	*	Not Classified
Calcium magnesium acetate (CMA)	(CAS No) 76123-46-1	*	Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Irrit. 2B, H320
Acid Blue 9	(CAS No) 2650-18-2	0.44 - 0.59	Not classified
Water	(CAS No) 7732-18-5	0.38 - 0.52	Not classified
Glycol Blend*	(CAS No) Proprietary	0.04 - 0.08	Not classified

Full text of H-phrases: see section 16

*The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if redness, pain, or irritation occurs.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/Injuries: None expected under normal conditions of use.

Inferno™ Snow and Ice Melter Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Symptoms/Injuries After Inhalation: May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing dust. Avoid generating dust.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

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

6.2. Environmental Precautions

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

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Avoid dust production.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Products: Strong acids. Strong bases. Strong oxidizers.

7.3. Specific End Use(s)

Ice melter.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

Inferno™ Snow and Ice Melter Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

8.2. Exposure Controls

Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment

: Protective goggles. Gloves. Protective clothing. Dust formation: dust mask.



Materials for Protective Clothing

: Chemically resistant materials and fabrics.

Hand Protection

: Wear chemically resistant protective gloves.

Eye Protection

: Chemical safety goggles.

Skin and Body Protection

: Wear suitable protective clothing.

Respiratory Protection

: Use NIOSH-approved dust mask if dust has the potential to become airborne.

Environmental Exposure Controls

: Do not allow the product to be released into the environment.

Consumer Exposure Controls

: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State

: Solid

Appearance

: No data available

Odor

: No data available

Odor Threshold

: No data available

pH

: No data available

Evaporation Rate

: No data available

Melting Point

: No data available

Freezing Point

: No data available

Boiling Point

: 1461 °C (2661.8 °F) (Sodium Chloride)

Flash Point

: No data available

Auto-ignition Temperature

: No data available

Decomposition Temperature

: No data available

Flammability (solid, gas)

: No data available

Vapor Pressure

: No data available

Relative Vapor Density at 20 °C

: No data available

Relative Density

: No data available

Specific gravity / density

: 2.17 g/cm³ (Sodium Chloride)

Solubility

: No data available

Partition Coefficient: N-Octanol/Water

: No data available

Viscosity

: No data available

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity:** Hazardous reactions will not occur under normal conditions.

10.2. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

10.3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

10.4. **Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Incompatible materials.

10.5. **Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers.

10.6. **Hazardous Decomposition Products:** Sodium oxides. Hydrogen chloride gas. Oxides of calcium. Oxides of magnesium.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Urea (57-13-6)	
LD50 Oral Rat	8471 mg/kg

Inferno™ Snow and Ice Melter Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

Calcium magnesium acetate(CMA) (76123-46-1)	
LD50 Oral Rat	3071 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 4600 mg/m ³ (Exposure time: 4 h)
ATE (Dust/Mist)	1.50 mg/l/4h
Sodium chloride (7647-14-5)	
LD50 Oral Rat	3 g/kg
LC50 Inhalation Rat	> 42 g/m ³ (Exposure time: 1 h)

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Urea (57-13-6)	
LC50 Fish 1	16200 – 18300 mg/l (Exposure time: 96 h – Species: Poecilia reticulata)
EC50 Daphnia 1	3910 mg/l (Exposure time: 48 h – Species: Daphnia magna [Static])
Sodium chloride (7647-14-5)	
LC50 Fish 1	5560 (5560 - 6080) mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
EC50 Daphnia 1	1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	12946 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 2	340.7 (340.7 - 469.2) mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

12.2. Persistence and Degradability No additional information available

12.3. Bioaccumulative Potential

Urea (57-13-6)	
BCF fish 1	<10
Log Pow	-1.59 (at 25 °C)
Sodium chloride (7647-14-5)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

Inferno™ Snow and Ice Melter Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Urea (57-13-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium chloride (7647-14-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2 US State Regulations Neither this product nor its chemical components appear on any US state lists.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 01/05/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
H319	Causes serious eye irritation
H320	Causes eye irritation
H332	Harmful if inhaled

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.

SDS US (GHS HazCom)

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: Infinity 83 Melon Bacterial
Enzyme Digester

Synonyms: Bacteria/Enzyme, Melon

ATRA Janitorial Supply

220 West Parkway Unit 6

Pompton Plains, NJ 07444

Non-Emergency:

US 973-248-3480

24 hr Emergency Spill Information:

1-888-255-3924

International

Section 2. Hazards Identification

EMERGENCY OVERVIEW

Appearance/Odor: Opaque white liquid, characteristic aroma

NOT Classified as hazardous by the criteria of NOHSC.

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:

Safety Phrases:

Hazard Phrases:

Precautionary Phrases:

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.

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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

None known

Section 3. Composition/Information on Ingredients

Component	CAS#	% by Weight	WHMIS Controlled
Polystyrene	none	< 0.1	N
Polyethylene Glycol	25322-68-3	0.1 - 1.0	N
Water	7732-18-5	60 - 100	N
Trade Secret Fragrance Mixture	none	0.1 - 1.0	N
Non-ionic Surfactant	NA	1 - 5	Y

Section 4. First Aid Measures

Eye Contact: Flush eyes with copious amounts of clean water, holding lids open. 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:

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: Keep out of eyes. Avoid skin contact.

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.

STORAGE

Section 8. Exposure Controls/Personal Protection

EXPOSURE GUIDELINES

COMPONENT:	TWA:	LD-50
Polystyrene	None established	Not applicable
Polyethylene Glycol	None established	Not applicable

SDS for Product: Infinity 83 Melon Bacterial Enzyme Digester, Rev. Date: 17 March 2016

Water	Not applicable	Not applicable
Trade Secret Fragrance Mixture	None established	Not determined
Non-ionic Surfactant	NA	NA

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 away from food and beverages.

Section 9. Physical and Chemical Properties

Color: White, opaque	Odor: Characteristic. Cucumber Melon.
Physical State: Liquid	Odor Treshold:
pH: 6.5 - 8.0	Freezing Point: Not determined
Evaporation Rate: As water	Boiling Point: 100°C/212°F
Flash Point: >96°C/>205°F PMCC	Flammability(solid,gas): Not applicable
Upper Flammability Limit: Not determined	Lower Flammability 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
Less than 1%, all fragrance	Percent Volatile: More than 95% including water

Section 10. Stability and Reactivity

Stability: Stable

Conditions to Avoid: Not applicable

Incompatible Materials: None known

Hazardous Decomposition Products: Not applicable

Possibility of Hazardous Reactions: Extremely unlikely

Section 11. Toxicology Information

ACCUTE EFFECTS

Oral LD50:	Not evaluated as a mixture. Weighted average more than 13 grams per kilogram.
Dermal LD50:	Not determined. Weighted average more than 10 grams per kilogram.
Inhalation:	Not determined. No components classified as toxic by inhalation at concentrations present.
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

SDS for Product: Infinity 83 Melon Bacterial Enzyme Digester, Rev. Date: 17 March 2016

Persistence/Degradability: Biodegradable

Bioaccumulation/Accumulation: Not applicable

Mobility in Environment: 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 of 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

SDS for Product: Infinity 83 Melon Bacterial Enzyme Digester, Rev. Date: 17 March 2016

federal, state and local laws.

INTRODUCTION TO TOXICOLOGY KIT # 10-530

Kemtec (AKA - AQUAPHOENIX)

Introduction to Toxicology simulates drug isolation in an authentic forensic screening. Using diatomaceous earth columns, students isolate drugs from simulated urine. They elute the drugs, run them on fluorescent and non-fluorescent chromatographic gels, and use chemical visualization techniques to identify specific drugs. The lab may be done in four standard lab periods or two three-hour lab periods and is easily separated into drug isolation and chromatography sections.

Chemicals Included:

- Chloroplatinic Acid
- Diphenylcarbozone
- Silica Gels
- Fluorescent Silica Gels
- Ammonium Hydroxide
- Acetone
- Ninhydrin
- Ethyl Acetate
- Methanol
- Acidified Methanol
- Potassium Iodide
- Simulated Urine

****PLEASE LOOK UP CHEMICAL SDS'S INDIVIDUALLY****

Section 1: Chemical Product and Company Identification

Page E1 of E2



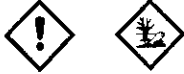
5100 West Henrietta Rd
PO Box 92912
Rochester, NY 14692-9012
Tel: (800) 962-2660

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

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

Product IODINE
Synonyms N/A

Section 2: Hazards Identification

Signal word: WARNING**Pictograms:** GHS07 / GHS09**Target organs:** Skin, Eyes, Respiratory system, Central nervous system, Cardiovascular system**GHS Classification:**

Acute toxicity, dermal (Category 4)

Acute toxicity, inhalation (Category 4)

Aquatic Acute (Category 1)

GHS Label information: Hazard statement(s):

H312: Harmful in contact with skin.

H332: Harmful if inhaled.

H400: Very toxic to aquatic life.

Precautionary statement(s):

P261: Avoid breathing mist/vapours/spray.

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.

P302+P352: IF ON SKIN: Wash with plenty of water and soap.

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

P362+P364: Take off contaminated clothing and wash it before reuse.

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.

P391: Collect spillage.

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 Components

Chemical Name	CAS #	%	EINECS
Iodine	7553-56-2	100%	231-442-4

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. Sublimes at ordinary temperatures yielding toxic iodine fumes.

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 use if not contaminated. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Section 7 Handling & Storage

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. Light sensitive. Protect from light and moisture.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Iodine	TWA: 0.01 ppm ^(FV) /STEL: 0.1 ppm ^(V)	STEL: C 0.1 ppm/C 1 mg/m ³	STEL: C 0.1 ppm/C 1 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: Blue-black crystals with a metallic luster.	Evaporation rate (= 1): Data not available	Partition coefficient: (n-octanol / water): 2.49
Odor: Characteristic odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: Data not available
Odor threshold: Data not available	Explosion limits: Lower / Upper: Data not available	Decomposition temperature: Data not available.
pH: Data not available	Vapor pressure (mm Hg): 0.3 mm	Viscosity: Data not available.
Melting / Freezing point: 113.5°C (235°F)	Vapor density (Air = 1): 1.003 @ 37°C	Molecular formula: I ₂
Boiling point: 184°C (363°F)	Relative density (Specific gravity): 4.93	Molecular weight: 253.80
Flash point: Not flammable	Solubility(ies): 0.03 g/100 ml water @ 20°C	

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Stable under recommended storage conditions. Excessive temperatures and heat. Protect from light and moisture.

Incompatible materials: Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia.

Hazardous decomposition products: Toxic iodide fumes.

Section 11 Toxicological Information

Acute toxicity: Oral-Rat LD50: 14,000 mg/kg

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

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

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

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

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: The substance is severely irritating to the respiratory tract. Symptoms include cough, wheezing, and labored breathing. Symptoms may be delayed.

Ingestion: Causes abdominal pain, diarrhea, nausea, and vomiting. Ingestion of levels of 2-3 grams may cause death.

Skin: The substance is irritating to the skin. Contact may cause redness and pain. Repeated or prolonged contact may cause skin sensitization in rare cases.

Eyes: Lachrymator. The substance is severely irritating to the eyes. Contact causes watering of the eyes, redness and pain.

Signs and symptoms of exposure: The substance may have effects on the thyroid. Exercise appropriate procedures to minimize potential hazards.

Additional information: RTECS #: NN1575000

Section 12 Ecological Information

Toxicity to fish: Very toxic to aquatic life.

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

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: UN3495

Shipping name: Iodine

Hazard class: 8.(6.1)

Packing group: III

Exceptions: Limited quantity equal to or less than 5 Kg

Reportable Quantity: No
2012 ERG Guide # 154

Marine pollutant: No

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
Iodine	Listed	Not listed	Not listed	Listed	Not listed

Section 14 Other Information

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

Revision Date: December 8, 2015

Supersedes: December 2, 2014

Safety Data Sheet

Iodine

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Iodine
Recommended Use: Science education applications
Synonyms: Di-iodine
Distributor: Carolina Biological Supply Company
2700 York Road, Burlington, NC 27215
1-800-227-1150
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 Hazard Identification

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

DANGER



Harmful if swallowed, in contact with skin or if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. Very toxic to aquatic life.

GHS Classification:

Skin Corrosion/Irritation Category 1C, Serious Eye Damage/Eye Irritation Category 1, Skin Sensitisation Category 1, Hazardous to the aquatic environment - Acute Category 1, Acute Toxicity - Inhalation Gas Category 4, Acute Toxicity - Dermal Category 4, Acute Toxicity - Oral Category 4

Acute Toxicity Inhalation Vapor Contains 100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains 100 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Iodine	7553-56-2	100

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: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin Contact: IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.
Ingestion: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

Section 5 Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.

Safety Data Sheet

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: Hydrogen Iodide

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.
Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Collect spillage.

Section 7 Handling and Storage

Handling: Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Avoid direct sunlight and heat.
Storage: Store locked up. Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Blue - Toxic. Store separately in a secured area.

Section 8 Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Iodine	0.01 ppm TWA (inhalable fraction and vapor)	0.1 ppm STEL (aerosol and vapor)	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: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.
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, Polyvinyl chloride, Butyl rubber

Section 9 Physical Data

Formula: I₂
Molecular Weight: 253.80
Appearance: Purple Solid
Odor: Strong Characteristic Irritating
Odor Threshold: No data available
pH: No data available
Melting Point: 114 C
Boiling Point: 184 C
Flash Point: No data available
Flammable Limits in Air: Not explosive

Vapor Pressure: 0.3 mm at 20°C
Evaporation Rate (BuAc=1): Sublimes at ordinary temperatures
Vapor Density (Air=1): 8.75
Specific Gravity: 4.93
Solubility in Water: Slightly Soluble
Log Pow (calculated): 2.49
Autoignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available
Percent Volatile by Volume: 100%

Safety Data Sheet

Section 10

Reactivity Data

Reactivity: Mildly reactive - See below
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: Elevated temperatures
Incompatible Materials: Metals (ferrous), Acetaldehydes, Rust, Strong reducing agents, Magnesium, Sulfur, Rubber, Plastics, Halogens
Hazardous Decomposition Products: Hydrogen iodide
Hazardous Polymerization: Will not occur

Section 11

Toxicity Data

Routes of Entry: Inhalation, ingestion, eye or skin contact.
Symptoms (Acute): Allergies, Impaired Kidney Function, Cardiovascular system, Central Nervous System Disorders, Pulmonary Edema, Headache, Iodism
Delayed Effects: Hyperthyroidism
Hypothyroidism
Acne
Allergies

Acute Toxicity:	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Chemical Name Iodine	7553-56-2	Oral LD50 Mouse 22000 mg/kg Oral LD50 Rat 14000 mg/kg	Not determined	Not determined

Carcinogenicity:	CAS Number	IARC	NTP	OSHA
Chemical Name Iodine	7553-56-2	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: Evidence of a sensitization effect.
Reproductive: Evidence of negative lactation effects.
Target Organ Effects:
Acute: No data available
Chronic: No data available

Section 12

Ecological Data

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: This material is expected to have moderate mobility in soil. It absorbs to most soil types.
Persistence: Adsorbs to sediment, evaporates into atmosphere.
Bioaccumulation: Bioconcentration may occur.
Degradability: Naturally occurring element. Does not biodegrade.
Other Adverse Effects: Combines with organics, forming new compounds.

Chemical Name	CAS Number	Eco Toxicity
Iodine	7553-56-2	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

Safety Data Sheet

Ground - DOT Proper Shipping Name:

UN3495
Iodine
Class 8 (Division 6.1)
P.G. III

Air - IATA Proper Shipping Name:

UN3495
Iodine
Class 8 (Division 6.1)
P.G. III

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
Iodine	7553-56-2	No	No	No	No	No

Section 16

Additional Information

Revised: 09/03/2014

Replaces: 09/03/2014

Printed: 09-11-2014

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

Glossary

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

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 407.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iodine

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: Acute toxicity, dermal and inhalation (Category 4). Harmful if inhaled or in contact with skin (H312+H332).

Hazard class: Skin corrosion or irritation (Category 1). Causes severe skin burns and eye damage (H314).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iodine	7553-56-2	I ₂	253.81	

SECTION 4 — FIRST AID MEASURES

Immediately call a POISON CENTER or physician (P310).

If inhaled: Remove victim to fresh air 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 (P305+P351+P338). **If on skin:** Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353). Wash contaminated clothing before reuse (P363).

If swallowed: Rinse mouth. Do NOT induce vomiting (P301+P330+P331).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.

When heated to decomposition, may emit toxic fumes.

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

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Sweep up the spill, place in a sealed bag or container, and dispose. 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 #2. Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates. Sublimes. Store in a Flinn Chem-Saf™ bag. Store in a cool, dry place. Frequently oxidizes metal shelves or metal containers in proximity to the iodine. Use only in a hood or well-ventilated area (P271). Do not breathe dust or fumes (P260).

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: Ceiling 0.1 ppm (OSHA); TLV 0.01 ppm (inhalable fraction and vapor) (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Gray-black flakes with a metallic luster. Characteristic odor.
Soluble: Alcohol and other organic solvents. Insoluble in water.

Boiling point: 185.24 °C
Melting point: 113.5 °C
Specific gravity: 4.98

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with magnesium, zinc, ammonia, and aluminum. Corrodes steel. Reacts violently with acetaldehyde.
Shelf life: Fair, sublimes. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Highly toxic, harmful vapor, corrosive, severe lachrymator, sensitizer, stomach pains, vomiting.
Chronic effects: Dermatitis.
Target organs: Thyroid.

ORL-HUM LD₅₀: 28 mg/kg
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #12a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Iodine. UN number: UN3495 Hazard class: 8L

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-442-4), RCRA code D002.

SECTION 16 — OTHER INFORMATION

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

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

Revision Date: March 25, 2014

Safety Data Sheet

Iodine Potassium Iodide Solution, 0.08%



Section 1 Product Description

Product Name: Iodine Potassium Iodide Solution, 0.08%
Recommended Use: Science education applications
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;

Not a dangerous substance according to GHS classification criteria. No known OSHA hazards.

GHS Classification:

Other Safety Precautions: May cause eye irritation.
May cause gastrointestinal discomfort.
May cause irritation to respiratory tract.
May cause irritation to skin.

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	99.88
Potassium Iodide	7681-11-0	0.08
Iodine	7553-56-2	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: Toxic fumes.

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Ventilate the contaminated area.
Isolate area. Keep unnecessary personnel away.
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. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container Do not flush to sewer. Do not flush spill to drain.

Safety Data Sheet

Section 7

Handling and Storage

Handling: Avoid creating and inhaling spray or mist.
Storage: Suitable for any general chemical storage.
Store in a cool dry place
Keep out of the reach of children.
Storage Code: Green - general chemical storage

Section 8

Protection Information

<u>Chemical Name</u>	<u>ACGIH</u>		<u>OSHA PEL</u>	
	<u>(TWA)</u>	<u>(STEL)</u>	<u>(TWA)</u>	<u>(STEL)</u>
Potassium Iodide	0.01 ppm TWA (inhalable fraction and vapor)	N/A	N/A	N/A
Iodine	0.01 ppm TWA (inhalable fraction and vapor)	0.1 ppm STEL (aerosol and vapor)	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: This product is a mixture.
Molecular Weight:
Appearance: Colorless to pale amber Liquid
Odor: Mild Characteristic
Odor Threshold: No data available
pH: No data available
Melting Point: Estimated 0 C
Boiling Point: 100 C
Flash Point: No data available
Flammable Limits in Air: No data available

Vapor Pressure: 14 (water)
Evaporation Rate (BuAc=1): <1
Vapor Density (Air=1): 0.7 (water)
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

Section 10

Reactivity Data

Reactivity: No data available
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: None known.
Incompatible Materials: Water-reactive materials, Ammonium Salts, Ammonia, Metals
Hazardous Decomposition Products: Toxic fumes.
Hazardous Polymerization: Will not occur

Section 11

Toxicity Data

Routes of Entry Ingestion, skin and eye contact.

Safety Data Sheet

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 90000 mg/kg		
Potassium Iodide	7681-11-0			
Iodine	7553-56-2	Oral LD50 Mouse 22000 mg/kg Oral LD50 Rat 14000 mg/kg		

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
Potassium Iodide	7681-11-0	Not listed	Not listed	Not listed
Iodine	7553-56-2	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: Thyroid
Chronic: No data available

Section 12

Ecological Data

Overview: This material is not expected to be harmful to the ecology.
Mobility: No data
Persistence: Dissolved into water, Adsorbs to sediment, evaporates into atmosphere.
Bioaccumulation: No data
Degradability: No data
Other Adverse Effects: No data
Combines with organics, forming new compounds.

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Potassium Iodide	7681-11-0	
Iodine	7553-56-2	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.

Safety Data Sheet

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 Iodide	7681-11-0	No	No	No	No	No
Iodine	7553-56-2	No	No	No	No	No

Section 16

Additional Information

Revised: 04/27/2017

Replaces: 04/27/2017

Printed: 05-05-2017

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

Glossary

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

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 416.00

Revision Date: January 16, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iron

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
Iron	7439-89-6	Fe	55.85	

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

Finely divided iron can be flammable.

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

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up the spill, place in a sealed bag or container, and dispose. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #1. Store with metals and metal hydrides.
Moisture sensitive material.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes. Wash hands thoroughly after handling.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Malleable silver-white metal. Odorless. Melting point: 1536 °C
Soluble: Sulfuric, hydrochloric, and nitric acids. Insoluble in water. Specific gravity: 7.87

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with acids, moisture, strong oxidizing agents, halogens, phosphorus, and oxygen.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Harmful dust.	ORL-RAT LD ₅₀ : 30 g/kg
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: 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 #26a 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

TSCA-listed, EINECS-listed (231-096-4), RCRA code D001.

SECTION 16 — OTHER INFORMATION

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

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

Revision Date: January 16, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 339.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iron(III) Chloride Solution, 1M to 2.3M

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: Skin corrosion or irritation (Category 3). Causes mild skin irritation (H316).

Hazard class: Serious eye damage or irritation (Category 2A). Causes serious eye irritation (H319).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iron(III) chloride	10025-77-1	FeCl ₃ •6H ₂ O	270.32	25-60%
Water	7732-18-5	H ₂ O	18.00	40-75%

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 (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313). **If skin irritation occurs:** Get medical advice or attention (P332+P313). Immediately flush with fresh water for at least 15 minutes. **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 #2. Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).
Exposure guidelines: (as iron chloride) TLV 1 mg/m³ (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Brown or amber liquid. Odorless. pH: ~1

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Good, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant.	ORL-RAT LD ₅₀ : 1278 mg/kg as iron(III) chloride.
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: 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

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

Revision Date: March 25, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 340.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iron(III) Nitrate

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: Oxidizing solids (Category 3). May intensify fire; oxidizer (H272). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Skin and serious eye damage, corrosion or irritation (Category 2, 2A). Causes skin and serious eye irritation (H315+H319).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iron(III) nitrate nonahydrate	7782-61-8	Fe(NO ₃) ₃ ·9H ₂ O	404.00	
Synonym: Ferric nitrate				

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 (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.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid. Strong oxidizer, contact with combustible material may cause fire.

When heated to decomposition, may emit toxic fumes.

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

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 #3. Store with amides, nitrates, nitrites and azides. Deliquescent. Store in a cool, dry place within a Flinn Chem-Saf™ bag. Keep and store away from clothing and combustible materials (P220). Take any precautions to avoid mixing with combustibles (P221).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling (P264). Exposure guidelines: TLV 1 mg/m³ (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Pale violet crystals. Odorless.
Soluble: Water and alcohol.

Melting point: 47.2 °C
Specific gravity: 1.7

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with combustible materials.
Shelf life: Fair to poor, deliquescent. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD₅₀: 3250 mg/kg
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Ferric nitrate. Hazard class: 5.1, Oxidizer. UN number: UN1466.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (233-899-5), RCRA code D001.

SECTION 16 — OTHER INFORMATION

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

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

Revision Date: March 21, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 341.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iron(III) Nitrate Solution

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: Skin corrosion or irritation (Category 1). Causes severe skin burns and eye damage (H314). Do not breathe mist, vapors or spray (P260).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iron(III) nitrate	7782-61-8	Fe(NO ₃) ₃ ·9H ₂ O	404.00	4-40%
Water	7732-18-5	H ₂ O	18.00	60-96%

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 (P304+P340).

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). Immediately call a POISON CENTER or physician (P310).

If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).

If swallowed: Rinse mouth. Do NOT induce vomiting (P301+P330+P331).

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.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264).
Exposure guidelines: (as iron nitrate) TLV 1 mg/m³ (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Brown-yellow liquid. Odorless.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with oxidizers and organic material.
Shelf life: Good, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Corrosive, irritant.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD₅₀: 3250 mg/kg as iron(III) nitrate
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

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

Revision Date: March 25, 2014

Safety Data Sheet

Iron Filings

CAROLINA[®]
www.carolina.com

Section 1 Product Description

Product Name: Iron Filings
Recommended Use: Science education applications
Synonyms: N/A
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;

Harmful to aquatic life.

GHS Classification:
Hazardous to the aquatic environment - Acute Category 3

Acute Toxicity Dermal Contains	100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Gas Contains	100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Vapor Contains	100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains	100 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Iron Filings	7439-89-6	100

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 dry chemical or cover with dry sand or lime.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Avoid Dusting. May become explosive when dispersed in air.
Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Section 6 Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: No adverse health affects expected from the clean-up of spilled material.
No special spill clean-up considerations. Collect and discard in regular trash.

Section 7 Handling and Storage

Safety Data Sheet

Handling: Avoid release to the environment. Keep container tightly closed in a cool, well-ventilated place. Keep away from heat. Keep away from sources of ignition - No smoking.
Storage: Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Green - general chemical storage

Section 8 Protection Information

<u>Chemical Name</u>	<u>ACGIH</u>	<u>OSHA PEL</u>
	(TWA) (STEL)	(TWA) (STEL)
No data available	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: Natural latex, Natural rubber, Neoprene, Nitrile, Polyvinyl chloride

Section 9 Physical Data

Formula: Fe	Vapor Pressure: 0.000001 hPa at 25 °C
Molecular Weight: 55.85	Evaporation Rate (BuAc=1): N/A
Appearance: Solid	Vapor Density (Air=1): N/A
Odor: No data available	Specific Gravity: 7.87
Odor Threshold: No data available	Solubility in Water: Practically Insoluble
pH: No data available	Log Pow (calculated): No data available
Melting Point: 1539 C	Autoignition Temperature: No data available
Boiling Point: No data available 2735 C	Decomposition Temperature: No data available
Flash Point: No data available	Viscosity: No data available
Flammable Limits in Air: N/A	Percent Volatile by Volume: 0%

Section 10 Reactivity Data

Reactivity: No data available
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: None known.
Hazardous Polymerization: Will not occur

Section 11 Toxicity Data

Routes of Entry: Inhalation, ingestion, eye or skin contact.
Symptoms (Acute): N/A
Delayed Effects: No data available

Acute Toxicity:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Iron Filings	7439-89-6	Oral LD50 Rat 30000 mg/kg	Not determined	Not determined

Carcinogenicity:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
No data available	7439-89-6	Not listed	Not listed	Not listed

Safety Data Sheet

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: See Section 2
Chronic: Not listed as a carcinogen by IARC, NTP or OSHA.

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 Iron Filings	CAS Number 7439-89-6	Eco Toxicity 96 HR LC50 MORONE SAXATILIS 13.6 MG/L [STATIC]
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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: N/A	Air - IATA Proper Shipping Name: Not regulated for air transport by IATA.
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Section 15 Regulatory Information

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

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
No data available	7439-89-6	No	No	No	No	No

Section 16 Additional Information

Revised: 09/03/2014 **Replaces:** 09/03/2014 **Printed:** 09-11-2014

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

Glossary

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

Section 1 Chemical Product and Company Information

80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

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

Product IRON METAL FILINGS, DEGREASED

Synonyms Iron Aggregate / Iron Filings / Iron / Iron Metal

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: None assigned

Pictograms: None assigned

Target organs: None known

GHS Classification:

None assigned

GHS Label information: Hazard statement:

None assigned

Precautionary statement:

None assigned

Supplemental information:

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

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

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Iron aggregate	65997-19-5	100%	266-048-1
Contains:			
Iron	1309-37-1	>90%	
Carbon	7440-44-0	<4.0%	
Silicon	7440-21-3	<3.0%	
Manganese	7439-96-5	<0.3-1.0%	
Chromium	7440-47-3	<0.0-0.2%	

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: Carbon dioxide, dry chemical, dry sand, alcohol foam. 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. A fire hazard in the form of a fine dust dispersed in air or by chemical reaction with strong oxidizers can be an explosion hazard, especially when heated.

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: 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. 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)
	Particulates not otherwise specified	TWA: 15 mg/m ³ Total dust	None established	None established

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

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

Section 9 Physical & Chemical Properties

Appearance: Solid. Grey particles.

Odor: No odor.

Odor threshold: Data not available.

pH: Data not available.

Melting / Freezing point: 1508.49°C (2750°F)

Boiling point: Data not available

Flash point: Data not available

Evaporation rate (= 1): Data not available

Flammability (solid/gas): Data not available.

Explosion limits: Lower / Upper: Data not available

Vapor pressure (mm Hg): Data not available

Vapor density (Air = 1): Data not available

Relative density (Specific gravity): 6.7 gm/cc

Solubility(ies): Insoluble 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, heat, sparks, open flame and other sources of ignition. Acids.

Incompatible materials: Strong oxidizers, organic acids, mineral acids, water.

Hazardous decomposition products: None known

Section 11 Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

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

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

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

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Inhalation may cause respiratory tract irritation.

Ingestion: No hazard known.

Skin: Contact with skin causes irritation.

Eyes: Contact may cause mechanical irritation and possible scratches to surface of the eye.

Signs and symptoms of exposure: See Potential health effects above.

Additional information: RTECS #: Data not available

Section 12 Ecological Information

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: No data available

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

Section 13 Disposal Considerations

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

Section 14 Transport Information

UN/NA number: Not applicable

Shipping name: Not Regulated

Hazard class: Not applicable

Packing group: Not applicable

Reportable Quantity: No

Marine pollutant: No

Exceptions: Not applicable

2012 ERG Guide # Not applicable

Section 15 Regulatory Information

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

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Iron aggregate	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16 Additional Information

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

SECTION 1 Identification



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	IRON METAL, DEGREASED
Synonyms	Iron Aggregate / Iron Filings / Iron / Iron Metal

SECTION 2 Hazard(s) 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: None assigned
Pictograms: None assigned
Target organs: None known

GHS Classification:
 None assigned

GHS Label information: Hazard statement:
 None assigned

Precautionary statement:
 None assigned

Supplemental information:
 Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

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

SECTION 3 Composition/Information on Ingredients

Chemical Name	CAS #	%	EINECS
Iron aggregate	65997-19-5	100%	266-048-1
Contains:			
Iron	1309-37-1	>90%	
Carbon	7440-44-0	<4.0%	
Silicon	7440-21-3	<3.0%	
Manganese	7439-96-5	<0.3-1.0%	
Chromium	7440-47-3	<0.0-0.2%	

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

Suitable Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam. 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. A fire hazard in the form of a fine dust dispersed in air or by chemical reaction with strong oxidizers can be an explosion hazard, especially when heated.

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: 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 2

Hazardous Ingredients

Page 4 of 6

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. Keep away from ignition sources.

Section 3

Exposure Controls/Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
		Particulates not otherwise specified	TWA: 15 mg/m ³ Total dust	None established

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

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

Section 4

Physical and Chemical Properties

Appearance: Solid. Grey particles. (40-60 mesh)
Odor: No odor.
Odor threshold: Data not available.
pH: Data not available.
Melting / Freezing point: 1508.49°C (2750°F)
Boiling point: Data not available
Flash point: Data not available

Evaporation rate (= 1): Data not available
Flammability (solid/gas): Data not available.
Explosion limits: Lower / Upper: Data not available
Vapor pressure (mm Hg): Data not available
Vapor density (Air = 1): Data not available
Relative density (Specific gravity): 6.7 gm/cc
Solubility(ies): Insoluble 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 5

Stability and Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition. Acids.

Incompatible materials: Strong oxidizers, organic acids, mineral acids, water.

Hazardous decomposition products: None known

Section 6

Toxicological Information

Acute toxicity: Data not available

Skin corrosion/irritation: Data not available

Serious eye damage/irritation: Data not available

Respiratory or skin sensitization: Data not available

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

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

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

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

Reproductive toxicity: Data not available

STOT-single exposure: Data not available

STOT-repeated exposure: Data not available

Aspiration hazard: Data not available

Potential health effects:

Inhalation: Inhalation may cause respiratory tract irritation.

Ingestion: No hazard known.

Skin: Contact with skin causes irritation.

Eyes: Contact may cause mechanical irritation and possible scratches to surface of the eye.

Signs and symptoms of exposure: See Potential health effects above.

Additional information: RTECS #: Data not available

Section 7

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 8

Transport and Packaging

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 9

Hazardous Materials 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 12

Regulatory Information

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

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Iron aggregate	Listed	Not listed	Not listed	Listed	Not listed	Not listed

Section 16

Additional Information

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

Revision Date: October 1, 2013

Supersedes: January 29, 2013



Benjamin Moore
Paints

Material Safety Data Sheet

Revision Date: 21-Jan-2010

Revision Number: 1

PRODUCT AND COMPANY IDENTIFICATION

Product Name IRONCLAD LATEX LOW LUSTRE METAL & WOOD ENAMEL
Product Code 363
Product Class WATER THINNED PAINT
Color All

Manufacturer Benjamin Moore & Co.
101 Paragon Drive
Montvale, NJ 07645
Phone: 201-573-9600
www.benjaminmoore.com

Emergency Telephone Number(s)
CHEMTREC: 800-424-9300

HAZARDOUS COMPONENTS

Hazardous Components

Chemical Name	CAS-No	Weight % (max)
Titanium dioxide	13463-67-7	20
Kaolin	1332-58-7	10
Ethylene glycol mono-2-ethylhexyl ether	1559-35-9	5
Ethylene glycol	107-21-1	5
Zinc phosphate	7779-90-0	5
Carbon black	1333-86-4	5
Diethylene glycol monomethyl ether	111-77-3	5
Sodium nitrite	7632-00-0	0.5

Emergency Overview

Vapors may be irritating to eyes, nose, throat, and lungs. May cause skin irritation and/or dermatitis.

Appearance liquid

Odor little or no odor

Potential Health Effects

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

Acute Effects
Eyes Contact with eyes may cause irritation.

Skin	May cause skin irritation and/or dermatitis. May be absorbed through the skin in harmful amounts.
Inhalation	May cause irritation of respiratory tract.
Ingestion	May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Contains ethylene glycol which may cause birth defects.
Chronic Effects	Repeated contact may cause allergic reactions in very susceptible persons. Can be absorbed through skin. May cause liver damage. May cause kidney damage.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions None known

HMIS **Health: 2*** **Flammability: 1** **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, Benjamin Moore & Co., 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.



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 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.
Notes To Physician	Treat symptomatically



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)	250
Flash Point (°C)	121
Flash Point Method	PMCC
Flammability Limits In Air	
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available

NFPA **Health: 2** **Flammability: 1** **Instability: 0** **Special: Not Applicable**

NFPA Legend

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

The ratings assigned by Benjamin Moore & Co. 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.



Personal Precautions	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.
Environmental Precautions	Prevent further leakage or spillage if safe to do so.
Methods For Clean-Up	Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.
Other Information	None known



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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Hazardous Components

Chemical Name	ACGIH	OSHA
Titanium dioxide	10 mg/m ³ - TWA	15 mg/m ³ - TWA total
Kaolin	2 mg/m ³ - TWA	15 mg/m ³ - TWA total 5 mg/m ³ - TWA
Ethylene glycol mono-2-ethylhexyl ether	N/E	N/E
Ethylene glycol	100 mg/m ³ - Ceiling	N/E
Zinc phosphate	N/E	N/E
Carbon black	3.5 mg/m ³ - TWA	3.5 mg/m ³ - TWA
Diethylene glycol monomethyl ether	N/E	N/E
Sodium nitrite	N/E	N/E

Legend

ACGIH - American Conference of Governmental Industrial Hygienists Exposure Limits
 OSHA - Occupational Safety & Health Administration 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.

Appearance	liquid
Odor	little or no odor
Density (lbs/gal)	8.9 - 10.4
Specific Gravity	1.06 - 1.25
pH	Not available
Viscosity (centistokes)	Not available
Evaporation Rate	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Wt. % Solids	40 - 60
Vol. % Solids	30 - 50
Wt. % Volatiles	40 - 60
Vol. % Volatiles	50 - 70
VOC Regulatory Limit (g/L)	< 250
Boiling Point (°F)	212
Boiling Point (°C)	100
Freezing Point (°F)	32

8. PHYSICAL AND CHEMICAL PROPERTIES

Freezing Point (°C)	0
Flash Point (°F)	250
Flash Point (°C)	121
Flash Point Method	PMCC
Upper Explosion Limit	No data available
Lower Explosion Limit	No data available

10. STABILITY AND REACTIVITY

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.

Acute Toxicity

Product

No information available

Component

Titanium dioxide

LD50 Oral: > 24000 mg/kg (Rat)
LD50 Dermal: > 10000 mg/m³ (Rabbit)
LC50 Inhalation (Dust): > 6.82 mg/L (Rat, 4 hr.)

Kaolin

LD50 Oral: > 5000 mg/kg (Rat)

Ethylene glycol

LD50 Oral: 4700 mg/kg (Rat)
LD50 Dermal: 9530 µg/L (Rabbit)

Carbon black

LD50 Oral: > 15400 mg/kg (Rat)
LD50 Dermal: > 3000 mg/kg (Rabbit)

Diethylene glycol monomethyl ether

LD50 Oral: 7,190 mg/kg (Rat)
LD50 Dermal: 2,500 µL/kg (Rabbit)

Sodium nitrite

LD50 Oral: 180 mg/kg (Rat)

LC50 Inhalation (Dust): 5.5 mg/m³ (Rat, 4 hr.)

Chronic Toxicity

Carcinogenicity

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

Chemical Name	ACGIH	IARC	NTP	OSHA Carcinogen
Titanium dioxide		2B - Possible Human Carcinogen		Listed
Carbon black		2B - Possible Human Carcinogen		Listed
Sodium nitrite		2A - Probable Human Carcinogen		

- 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

ACGIH - American Conference of Governmental Industrial Hygienists
 IARC - International Agency for Research on Cancer
 NTP - National Toxicity Program
 OSHA - Occupational Safety & Health Administration



Ecotoxicity Effects

Product

Acute Toxicity to Fish

No information available

Acute Toxicity to Aquatic Invertebrates

No information available

Acute Toxicity to Aquatic Plants

No information available

Component

Acute Toxicity to Fish

12. ECOLOGICAL INFORMATION

Titanium dioxide

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

Ethylene glycol

LC50: 8050 mg/L (Fathead Minnow - 96 hr.)

Acute Toxicity to Aquatic Invertebrates

No information available

Acute Toxicity to Aquatic Plants

No information available

13. DISPOSAL INFORMATION

Waste Disposal Method

Dispose of in accordance with federal, state, and local regulations. Dry, empty containers may be recycled in a can recycling program. Local requirements may vary, consult your sanitation department or state-designated environmental protection agency for more disposal options.

14. TRANSPORT INFORMATION

DOT Not regulated

ICAO / IATA Not regulated

IMDG / IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

United States TSCA Yes - All components are listed or exempt.
Canada DSL No - Not all of the components are listed.

Federal Regulations

SARA 311/312 hazardous categorization

Acute Health Hazard	Yes
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:

<u>Chemical Name</u>	<u>CAS-No</u>	<u>Weight % (max)</u>
Ethylene glycol	107-21-1	5
Sodium nitrite	7632-00-0	0.5

This product may contain trace amounts of (other) SARA reportable chemicals. Contact Benjamin Moore & Co. for further information.

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

This product contains the following HAPs:

<u>Chemical Name</u>	<u>CAS-No</u>	<u>Weight % (max)</u>
Ethylene glycol	107-21-1	5
Diethylene glycol monomethyl ether	111-77-3	5

This product may contain trace amounts of (other) HAPs chemicals. Contact Benjamin Moore & Co. for further information.

State Regulations

California Proposition 65

This product may contain small amounts of materials known to the state of California to cause cancer or reproductive harm.

State Right-to-Know

<u>Chemical Name</u>	<u>Massachusetts</u>	<u>New Jersey</u>	<u>Pennsylvania</u>	<u>Louisiana</u>	<u>Rhode Island</u>
Titanium dioxide	X	X	X		X
Kaolin	X	X	X		X
Ethylene glycol	X	X	X		X
Carbon black	X	X	X		X
Diethylene glycol monomethyl ether	X		X		
Sodium nitrite	X	X	X		

Legend

X - Listed



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.
360 Route 206 - P.O. Box 4000
Flanders, NJ 07836
866-690-1961

Revision Date: 21-Jan-2010
Revision Summary 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 MSDS

Section 1 Chemical Product and Company Information

Page 1 of 2



80 Northwest Blvd.
Nashua, NH 03063
(800) 225-3739

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

Product ISOPROPYL ALCOHOL

Synonyms 2-Propanol ; Isopropanol

Section 2 Hazards Identification

Signal word: DANGER

Pictograms: GHS02 / GHS07

Target organs: Central nervous system, Liver, Kidneys.



GHS Classification:

Flammable liquid (Category 2)

Eye irritation (Category 2)

STOT-SE (Category 3)

GHS Label information: Hazard statement(s):

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

Precautionary statement(s):

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233: Keep container tightly closed.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing mist/vapours/spray.

P264: Wash hands thoroughly after handling.

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

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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

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.

P370+P378: In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam to extinguish.

P403+P235: Store in a well-ventilated place. Keep cool.

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 or reproductive toxicity.

Section 3 Composition / Information on Ingredients

Chemical Name	CAS #	%	EINECS
Isopropyl alcohol	67-63-0	100%	200-661-7

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. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES SERIOUS 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: Dry chemical, CO₂, water spray or alcohol-resistant foam.

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

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

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: Remove all sources of ignition. 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

Page E2 of E2

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. Keep away from ignition sources.

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Isopropanol	TWA: 200 ppm / STEL: 400 ppm	TWA: 400 ppm / 980 mg/m ³	TWA: 400 ppm / STEL: 500 ppm

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: Aromatic odor.

Odor threshold: Data not available.

pH: Data not available.

Melting / Freezing point: -90°C (-130°F)

Boiling point: 82°C (179.6°F)

Flash point: 12°C (53°F) CC

Evaporation rate (Butyl acetate = 1): 2.3

Flammability (solid/gas): Data not available.

Explosion limits: Lower / Upper: 2% / 12%

Vapor pressure (mm Hg): 33 mm @20°C

Vapor density (Air = 1): 2.1

Relative density (Specific gravity): 0.786-0.79 @ 20°C

Solubility(ies): Complete in water.

Partition coefficient: (n-octanol / water): Log Pow: 0.05

Auto-ignition temperature: 399°C (750°F) ASTM-E659-78

Decomposition temperature: Data not available.

Viscosity: Data not available.

Molecular formula: (CH₃)₂CHOH

Molecular weight: 60.10

Section 10 Stability & Reactivity

Chemical stability: Stable

Hazardous polymerization: Will not occur.

Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong oxidizing materials, caustics, aluminums, metals, nitroform, oleum, chlorinated compounds can react vigorously with this alcohol.

Hazardous decomposition products: Carbon oxides.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 4396 mg/kg ; Inhalation-rat LC50: 72.6 mg/L/4 hours ; Dermal-rat LD50: 12,800 mg/kg

Skin corrosion/irritation: Skin-rabbit - Slight irritant.

Serious eye damage/irritation: Eyes-rabbit - Irritating.

Respiratory or skin sensitization: Not sensitizing

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

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

IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans

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: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT-repeated exposure: Data not available

Aspiration hazard: Yes

Potential health effects:

Inhalation: Inhalation of high vapor concentrations may cause central nervous system depression resulting in dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat. Continued inhalation may result in unconsciousness and death.

Ingestion: Aspiration hazard. Liquid can directly enter the lungs (aspirated) when swallowed or vomited. Serious lung damage and possible fatal chemical pneumonia can develop if this occurs.

Skin: Prolonged or repeated contact may cause irritation and drying, cracking and defatting of the skin which can lead to dermatitis.

Eyes: Contact causes burning sensation, redness, swelling, and/or blurred vision.

Signs and symptoms of exposure: See Potential health effects above.

Additional information: RTECS #: NT8050000 [Isopropanol]

Section 12 Ecological Information

Toxicity to fish: Pimephales promelas (Fish, fresh water) LC50: 9640 mg/L/96 hours [Isopropanol]

Toxicity to daphnia and other aquatic invertebrates: Artemia salina (Crustacea), EC50 = >10,000 mg/L/24 hours [Isopropanol]

Toxicity to algae: Scenedesmus quadricauda (Algae), LOEC50 = 1,800 mg/L/7 days [Isopropanol]

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: UN1219

Shipping name: Isopropanol

Hazard class: 3

Packing group: II

Reportable Quantity: No

Marine pollutant: No

Exceptions: Limited quantity equal to or less than 1 L

ERG Guide # 129

Section 15 Regulatory Information

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

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Isopropyl alcohol	Listed	Not listed	Not listed	Listed	Not listed	B2; 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: April 16, 2014

Supersedes: April 17, 2013

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 420.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Isopropyl Alcohol

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: Flammable liquids (Category 2). Highly flammable liquid and vapor (H225). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Skin corrosion or irritation (Category 3). Causes mild skin irritation (H316).

Hazard class: Serious eye damage or irritation (Category 2A). Causes serious eye irritation (H319).

Hazard class: Specific target organ toxicity, single exposure; Narcotic effects (Category 3). May cause drowsiness or dizziness (H336). Avoid breathing mist, vapors or spray (P261).

The single lethal dose for a human adult is about 250 mL, although as little as 100 mL can be fatal. Although isopropyl alcohol is slightly toxic by definition, teachers should be alert to students attempting to drink this "alcohol" on a dare.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Isopropyl alcohol	67-63-0	C ₃ H ₈ O	60.10	
Synonyms: 2-Propanol, Rubbing alcohol				

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 (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353). **If skin irritation occurs:** Get medical advice or attention (P332+P313).

SECTION 5 — FIRE FIGHTING MEASURES

Class IB flammable liquid.

Flash point: 12 °C Flammable limits: Lower: 2.0% Upper: 12.7% Autoignition Temperature: 399 °C

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher (P370+P378).

NFPA CODE

H-1

F-3

R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert 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 #2. Store with alcohols, glycols, amines and amides. Store in a dedicated flammables cabinet. If a flammables cabinet is not available, store in Flinn Saf-Stor™ can. Keep container tightly closed (P233). Keep cool (P235). Use only in a hood or well-ventilated area (P271). Avoid prolonged storage (see Section 10).

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: PEL 980 mg/m³ (OSHA); TLV 492 mg/m³ Ceiling 984 mg/m³ (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Clear, colorless liquid. Distinctive odor like rubbing alcohol.

Soluble: Water, alcohol, and ether

Boiling point: 83 °C

Melting point: -889 °C

Specific gravity: 0.8

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acids, and isocyanates.

Shelf life: Fair. Organic peroxides may develop if exposed to light and air, which can result in explosions, especially when distilled.

Avoid prolonged storage.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Serious eye irritant, mild skin irritant, dizziness, drowsiness, nausea, headache.

Chronic effects: N.A.

Target organs: Eyes, skin, respiratory system.

ORL-RAT LD₅₀: 5045 mg/kg

IHL-RAT LC₅₀: 16,000 ppm/8H

SKN-RBT LD₅₀: 12,800 mg/kg

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 #18a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Isopropyl alcohol. Hazard class: 3, Flammable liquid. UN number: UN1219.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (200-661-7), RCRA code D001.

SECTION 16 — OTHER INFORMATION

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

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

Revision Date: March 25, 2014

Section 1 Chemical Product and Company Information

Page 1 of 2



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 ISOPROPYL ALCOHOL

Synonyms 2-Propanol ; Isopropanol

Section 2 Hazards Identification

Signal word: DANGER

Pictograms: GHS02 / GHS07

Target organs: Central nervous system, Liver, Kidneys.



GHS Classification:

Flammable liquid (Category 2)

Eye irritation (Category 2)

STOT-SE (Category 3)

GHS Label information: Hazard statement(s):

H225: Highly flammable liquid and vapour.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

Precautionary statement(s):

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/lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing mist/vapours/spray.

P264: Wash hands thoroughly after handling.

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

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P337+P313: If eye irritation persists: Get medical attention.

P370+P378: In case of fire: Use dry chemical, alcohol foam, carbon dioxide or water spray to extinguish.

P403+P235: Store in a well-ventilated place. Keep cool.

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
Isopropyl alcohol	67-63-0	100%	200-661-7

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. CAUSES RESPIRATORY TRACT IRRITATION. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: CAUSES 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: Carbon dioxide, dry chemical, dry sand, alcohol foam.

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

Specific Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapors formed from this product are heavier than air and may travel along the ground to a distant source of ignition and flash back instantly. Flame may not be visible in daylight.

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: Remove all sources of ignition. Absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

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

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

Section 8 Exposure Controls / Personal Protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Isopropanol	TWA: 200 ppm / STEL: 400 ppm	TWA: 400 ppm / 980 mg/m ³	TWA: 400 ppm / STEL: 500 ppm

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

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

Section 9 Physical & Chemical Properties

Appearance: Clear, colorless liquid.	Evaporation rate (Butyl acetate = 1): > 1	Partition coefficient: (n-octanol / water): Data not available
Odor: Aromatic odor.	Flammability (solid/gas): Data not available.	Auto-ignition temperature: 399°C (750°F) ASTM-E659-78
Odor threshold: Data not available.	Explosion limits: Lower / Upper: 2% / 12%	Decomposition temperature: Data not available.
pH: Data not available.	Vapor pressure (mm Hg): 33 mm @20°C	Viscosity: Data not available.
Melting / Freezing point: Approximately -50°C (-58°F)	Vapor density (Air = 1): 2.1	Molecular formula: Mixture
Boiling point: Approximately 85-100°C (185-212°F)	Relative density (Specific gravity): 0.8	Molecular weight: Mixture
Flash point: 12°C (53°F) CC	Solubility(ies): Complete in water.	

Section 10 Stability & Reactivity

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

Conditions to avoid: Excessive temperatures, heat, sparks, open flame and other sources of ignition.

Incompatible materials: Strong oxidizing materials, caustics, aluminums, metals, nitroform, oleum, chlorinated compounds can react vigorously with this alcohol.

Hazardous decomposition products: Oxides of carbon.

Section 11 Toxicological Information

Acute toxicity: Oral-rat LD50: 4396 mg/kg ; Inhalation-rat LC50: 72.6 mg/L/4 hours ; Dermal-rat LD50: 12,000 mg/kg

Skin corrosion/irritation: Skin-rabbit - Slight irritant.

Serious eye damage/irritation: Eyes-rabbit - Irritating.

Respiratory or skin sensitization: Not sensitizing

Germ cell mutagenicity: Data not available

Carcinogenicity: Data not available

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

IARC classified: Group 3: Not classifiable as to its carcinogenicity to humans

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: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT-repeated exposure: Data not available

Aspiration hazard: Yes

Potential health effects:

Inhalation: Inhalation of high vapor concentrations may cause central nervous system depression resulting in dizziness, drowsiness, nausea, vomiting, inability to concentrate and irritation of the throat. Continued inhalation may result in unconsciousness and death.

Ingestion: Aspiration hazard. Liquid can directly enter the lungs (aspirated) when swallowed or vomited. Serious lung damage and possible fatal chemical pneumonia can develop if this occurs.

Skin: Prolonged or repeated contact may cause irritation and drying, cracking and defatting of the skin which can lead to dermatitis.

Eyes: Contact causes burning sensation, redness, swelling, and/or blurred vision.

Signs and symptoms of exposure: See Potential health effects above.

Additional information: RTECS #: NT8050000 [Isopropanol]

Section 12 Ecological Information

Toxicity to fish: Pimephales promelas (Fish, fresh water) LC50: 9640 mg/L/96 hours [Isopropanol]

Toxicity to daphnia and other aquatic invertebrates: Artemia salina (Crustacea), EC50 = >10,000 mg/L/24 hours [Isopropanol]

Toxicity to algae: Scenedesmus quadricauda (Algae), LOEC50 = 1,800 mg/L/7 days [Isopropanol]

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: UN1219 **Shipping name:** Isopropanol

Hazard class: 3

Packing group: II

Reportable Quantity: No

Marine pollutant: No

Exceptions: Limited quantity equal to or less than 1 L

ERG Guide # 129

Section 15 Regulatory Information

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

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	WHMIS Classification
Isopropyl alcohol	Listed	Not listed	Not listed	Listed	Not listed	Ⓐ Ⓙ B2; D2B

Section 16 Additional Information

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

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

1. Identification

1.1. Product identifier

Product Identity

Isopropyl Rubbing Alcohol USP 70%

Alternate Names

Product Code: 112-7067, 112-7011, 112-7068

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

Intended use

First aid to help prevent the risk of infection in: minor cuts, scrapes, burns. For external use only.

Application Method

Clean the affected area. Apply 1 to 3 times daily.

1.3. Details of the supplier of the safety data sheet

Company Name

Henry Schein Inc.
135 Duryea Road
Melville, NY 11747

Emergency

Chemtrec 24 hour Emergency Telephone No.

800-424-9300

Customer Service:

800-472-4346

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Flam. Liq. 3;H226

Flammable liquid and vapor.

Eye Irrit. 2;H319

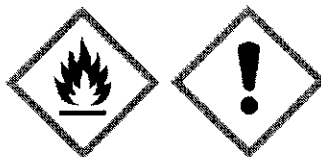
Causes serious eye irritation.

STOT SE 3;H336

May cause drowsiness or dizziness.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Warning

H226 Flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness and dizziness.

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

[Prevention]:

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.

P235 Keep cool.

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.

P261 Avoid breathing dust / fume / gas / mist / vapors / spray.

P264 Wash thoroughly after handling.

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

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P337+313 If eye irritation persists: Get medical advice / attention.

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P370+378 In case of fire: Use extinguishing media listed in section 5 of SDS for extinction.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Isopropyl Alcohol CAS Number: 0000067-63-0	50 - 75	Flam. Liq. 2;H225 Eye Irrit. 2;H319 STOT SE 3;H336	[1][2]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Overview	Signs and Symptoms of Exposure: Giddiness, headache, dizziness and nausea. Medical Conditions Generally Aggravated by Exposure: Pre-existing and respiratory disorders, may be aggravated by exposure. Health Hazards (Acute and Chronic): Generally used as a rubdown. Vapor irritates eyes. High concentration of vapor can irritate respiratory tract, is anesthetic and may cause CNS depression. Not a carcinogen. Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage. See section 2 for further details.
Inhalation	May cause drowsiness or dizziness.
Eyes	Causes serious eye irritation.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, water fog.
Do not use; water jet.

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Burning may produce carbon monoxide and carbon dioxide contamination.

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

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

5.3. Advice for fire-fighters

Dilution of burning liquid with water will affect extinguishment.

None

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Eliminate all sources of ignition. Small spills should be flushed with large quantities of water, larger spills should be collected for disposal.

Atomize into an incinerator where permitted under appropriate federal, state, and local regulations.

7. Handling and storage

7.1. Precautions for safe handling

Do NOT take internally. Flammable liquid. Keep away from heat, sparks and open flames. Keep container closed. See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

Incompatible materials: Anyhydride, isocyanate, monomer and organo-metallic.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

8. Exposure controls and personal protection

8.1. Control parameters

		Exposure	
CAS No.	Ingredient	Source	Value
0000067-63-0	Isopropyl Alcohol	OSHA	TWA 400 ppm (980 mg/m3) STEL 500 ppm
		ACGIH	TWA: 200 ppm STEL: 400 ppm Revised 2003,
		NIOSH	TWA 400 ppm (980 mg/m3) ST 500 ppm (1225 mg/m3)
		Supplier	No Established Limit

		Carcinogen Data	
CAS No.	Ingredient	Source	Value
0000067-63-0	Isopropyl Alcohol	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; Group 4: No;

8.2. Exposure controls

- Respiratory** If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.
- Eyes** Protective goggles if desired.
- Skin** Rubber or vinyl gloves if desired.
- Engineering Controls** Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
- Other Work Practices** Ensure showers and eyewash stations are available. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless Liquid
Odor	Characteristic
Odor threshold	Not Measured
pH	Not Measured
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	87C
Flash Point	77F (TCC)

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

Evaporation rate (Ether = 1)	2.3 (Butyl Acetate=1)
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: 2 Upper Explosive Limit: 12
Vapor pressure (Pa)	33 mmHg
Vapor Density	2.07 (Air=1)
Specific Gravity	0.88 (H2O=1) @ 25 C
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
% Volatile	100
Isopropyl Alcohol Assay by Volume	68%-72%

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid heat, sparks and open flame.

10.5. Incompatible materials

Anyhydride, isocyanate, monomer and organo-metallic.

10.6. Hazardous decomposition products

Burning may produce carbon monoxide and carbon dioxide contamination.

11. Toxicological information

Acute toxicity

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Ingredient	Oral LD50,	Skin LD50,	Inhalation	Inhalation	Inhalation
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Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

	mg/kg	mg/kg	Vapor LD50, mg/L/4hr	Dust/Mist LD50, mg/L/4hr	Gas LD50, ppm
Isopropyl Alcohol - (67-63-0)	4,710.00, Rat - Category: 5	12,800.00, Rat - Category: NA	72.60, Rat - Category: NA	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	2	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	3	May cause drowsiness or dizziness.
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

1999/45/EC and GHS and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Isopropyl Alcohol - (67-63-0)	1,400.00, <i>Lepomis macrochirus</i>	100.00, <i>Daphnia magna</i>	100.00 (72 hr), <i>Scenedesmus subspicatus</i>

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number			
14.2. UN proper shipping name			
14.3. Transport hazard class(es)	DOT Hazard Class: DOT Label:	IMDG: Sub Class:	Air Class:
14.4. Packing group			
14.5. Environmental hazards			
IMDG	Marine Pollutant:		
14.6. Special precautions for user			

Safety Data Sheet
Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification B2 D2B

US EPA Tier II Hazards Fire: Yes
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Isopropyl Alcohol

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%):

Isopropyl Alcohol

Pennsylvania RTK Substances (>1%):

Isopropyl Alcohol

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our

Safety Data Sheet

Isopropyl Rubbing Alcohol USP 70%

SDS Revision Date:

02/24/2015

products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness and dizziness.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

Disclaimer: The contents of this MSDS are believed to be correct but do not purport to be all-inclusive and should only be used as a guide. Henry Schein Inc. disclaims any express or implied warranty as to the accuracy of the above information and shall not be held liable for any direct, incidental or consequential damages resulting from the reliance on the above information.

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