MSDS LIST OF MATERIALS FOR THE RIO SALADO SCIENCE LAB

A	B	C
Alum *(*See- Aluminum*	Baking Soda	Calcium Chloride, Anhydrous
Potassium Sulfate)	*(*See-Sodium bicarbonate)*	Carbon (rod)
Alchohol, Isopropyl (70 & 91%)	Beano Tablets	Carosafe
Alchohol, Ethyl (rubbing alcohol)	Benedict's Solution	(Specimen Preservative)
Aluminum (shot, strips)	Biuret Test Solution	Charcoal, activated
Ammonium Carbonate	Buffer Solution, pH 4.00	Copper (Shot, Strips)
Antacid Tablets	Buffer Solution, pH 10.00	Copper Sulfate powder
		Corn Starch

D	E	F
Damp Rid	Egg whites, dried	Flax Seed Meal
Diastix Reagent Strips	Epsom Salts	
	*(*See- Magnesium sulfate)*	
	Expo White Board Clearner	

G	H	I
Glycerine 99.5%, 50% (Botanical		Iron Filings
Packing Fluid for Algae)		Iron Granules (shot)
		Iron Metal (strips)
Goo Gone Spray Gel		
Green Solutions- All Purpose		
Cleaner		
Green Solutions- "Neutral"		
Disinfectant		

J	K	L
J-B Weld- Hardner		Lead (shot, strips, sinker)
J-B Weld- Resin		Litmus paper (Red, Blue, pH)

M	N	O
Magnesium Chloride	Nickel (Strips)	
Magnesium Metal (Ribbon)		
Magnesium Sulfate *(Epsom Salt)*		
Metal Fire Extinguisher		
Milk, nonfat dry		

P	Q	R
Phenol Red (Tablets)		
Potassium Chloride		
Potato starch		

S	T	U
Sodium Carbonate, *(Washing*	Talcum powder	
(Soda, anhydrous)	Tin (Strips)	
Sodium Chloride		
(Rock Salt, Sea Salt, Table Salt)		
Starch, Potato		
Sudan III, powder		
Sun Stations- Liquid Soap/Dish		
Detergent		

V	W	X
	Washing soda *(*See- Sodium*	
	carbonate, anhydrous)	

Y	Z	
	Zinc Metal (Pieces & Strips)	

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 42.00
Revision Date: May 11, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Aluminum Potassium Sulfate "Alum"

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Aluminum potassium sulfate
Synonym: alum
CAS#: 7784-24-9

SECTION 3 — HAZARDS IDENTIFICATION

White, crystalline powder.
Irritating to body tissues. Avoid all body tissue contact.

FLINN AT-A-GLANCE
Health-1
Flammability-0
Reactivity-0
Exposure-1
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Give large quantities of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.
When heated to decomposition, emits toxic sulfur trioxide fumes.
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. 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 #2. Store with acetates, halides, sulfates, sulfites, thiosulfates, and phosphates.
Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron. Use exhaust ventilation to keep airborne concentrations low.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White, crystalline powder.
Solubility: Slightly soluble in water (15 %).
Formula: $AlK(SO_4)_2\ 12H_2O$
Formula Weight: 474.39
Specific Gravity: 1.7
Melting Point: 92.5 °C

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers, bases, steel, aluminum, copper, and zinc. When heated to decomposition (200 °C), emits toxic sulfur trioxide fumes.
Shelf life: Indefinite.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: irritant, gastrointestinal disturbances
Chronic effects: N.A.
Target organs: N.A.
ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
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 (233-141-3).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

SECTION 1:Chemical Product and Company Identification

Manufacturer: Cumberland Swan
One Swan Drive
Smyrna, TN 37167

Date: March 2000

Product: Isopropyl Alcohol (IPA)

50%, 70%, 91% and 99% IPA

Telephone: (615) 459-8900
24hr Emergency: (615) 459-8900 ext. 5270

SECTION 2: Composition/Information on Ingredients

Name: Isopropanol, IPA, 2-Propanol, Dimethyl Carbinol CAS#: 67-63-0

SECTION 3: Hazards Identification

Colorless, volatile liquid with the odor of rubbing alcohol. Isopropyl Alcohol is a dangerous fire risk. Prolonged exposure to elevated concentrations of vapors may result in irritation of the eyes, nose, and throat and central nervous system (CNS) depression. Prolonged dermal exposure can result in dry, cracking skin.

Potential Routes of Exposure: Ingestion, inhalation, dermal contact, eye contact

Target Organs: Eyes, skin, respiratory system

Symptoms of Overexposure:

Inhalation:	Mild irritation of eyes, nose and throat.
Ingestion:	Drowsiness, headache
Dermal Contact:	Dry, cracking skin
Acute Effects:	Irritation of skin and/or upper respiratory tract as noted above. Acute CNS depression may be manifested as giddiness, headache, dizziness and/or nausea.
Chronic Effects:	Chronic exposure can result in skin irritation and contact dermititus Pre-existing disorders of the skin, eyes, and respiratory tract may be exacerbated by exposure to isopropyl alcohol.

HMIS: H=1, F=3, R=0 See Section 8 for PPE information

SECTION 4: First Aid Measures

Eye:	Flush eyes with copious amount of water for at least 15 minutes
Skin:	Flush with water. If irritation persists, seek medical attention.
Ingestion:	Do not induce vomiting if victim is unconscious or drowsy. Seek medical attention or contact the poison control center.
Inhalation:	Remove victim to fresh air and provided oxygen if breathing is difficult. Seek Medical attention if breathing continues to be difficult.

SECTION 5: Fire Fighting Measures

Extinguishing Media:	Use water fog, alcohol foam, dry chemical or CO2
Unusual Fire or Explosion Hazards:	Containers exposed to intense heat from fires should be cooled with large amounts of water to prevent buildup of internal pressure due to vapor generation which could result in container rupture.
Recommendations:	Clear area of unprotected personnel. Wear complete turnout gear. Cool containers exposed to fire with water.

SECTION 6: Accidental Release Measures

Large Spills:	Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Contain source of spill. Dike or otherwise confine spilled product. Uncontrolled releases to air, land, or water may be reportable to the National Response Center (1-800-424-8802).
Small Spills:	Take up with absorbent material and place in non-leaking container; seal tightly. Dispose of absorbent (see section 13)

SECTION 7: Handling and Storage

Storage Requirements:	Store in tightly closed containers in a cool, dry area away from heat and other possible ignition sources.
Handling precautions:	Use non-sparking tools to open containers. Maintain appropriate class of fire extinguishers nearby in case of fire.

SECTION 8: Exposure Controls / Personal Protection

OSHA PEL=400ppm OSHA STEL=500ppm IDLH=12,000ppm

Recommended Engineering Controls: Use explosion-proof ventilation equipment as necessary to maintain airborne concentrations below the PEL. Ground all containers to prevent static sparks during fluid transfers.

Recommended Admin Controls: Train employees on the hazards of Isopropyl Alcohol

PPE: Goggles, gloves, NIOSH approved respiratory protection required when above PEL/TWA

Recommended Hygiene Practices: Clean PPE and work clothing contaminated prior to reuse. After working with this product, be sure to wash before eating, smoking, drinking, or applying cosmetics.

SECTION 9: Physical and Chemical Properties

Appearance: Colorless Liquid UEL: 12% LEL: 2%

Odor: Mild Rubbing Alcohol Odor Threshold: 43ppm Water solubility: Miscible

	50% IPA	70%IPA	91%IPA	99%IPA
Vapor Pressure (@ 68^0F) approx.	29mm	23mm	33mm	33mm
Specific Gravity	.929	.878	.790	.790
Boiling Point	176 ^{0} F	176 ^{0} F	180 ^{0} F	181 ^{0} F
Flash Point (TAG Open Cup)	74.5 ^{0} F	70.5 ^{0} F	54 ^{0} F	53 ^{0} F
Freezing Point	-32-50 ^{0} C	-32-50 ^{0} C	-32-50 ^{0} C	-127 ^{0} F
Molecular Weight	47.5	47.5	47.5	60.1
Auto Ignition Temperature	No Data	No Data	No Data	750 ^{0} F

SECTION 10: Stability and Reactivity

Stability:	Stable
Polymerization:	Will not occur
Incompatible Chem:	Strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acids, isocyanates
Conditions to avoid:	Heat, sparks, and open flame. Do Not store in aluminum > 120 ^{0} F
Hazardous Products:	CO and unidentified organic compounds may be formed of Decomposition

SECTION 11: Toxicological Information

LD50: 5,840 mg/kg (acute oral - rat); 13,000 mg/kg (acute dermal - rabbit)
LD50: 16,000 ppm/8hr (inhalation - rat) **Mutagenicity:** Not Indicated
LD_{lo} : 5,000 mg/kg (oral - rabbit) **Reproductive Effects**: Not Indicated
Carcinogenicity: Not identified as a carcinogen by OSHO, IARC, or NTP

SECTION 12: Ecological Information

Ecotoxicity: N/A **Environmental Fate:** N/A
Soil Absorption/Mobility: Highly Mobile
Environmental Degradation: Should be removed readily from soils and water by volatilization and biodegradation.

SECTION 13: Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations.
Disposal regulatory Requirements: Follow applicable Federal, state, and local regulations. Consider fuels blending as an alternative to incineration.

SECTION 14: Transport Information

DOT Shipping Name: Isopropanol DOT Packing Group: II
DOT Hazard Class: 3 DOT Label: Flammable Liquid
UN ID#: UN 1219

SECTION 15: Regulatory Information

RCRA Hazardous Waste Number/ Classification:D001 CERCLA Substance: N/A
HAZARDOUS AIR POLUTANT (CAA): No SARA 311/312 Codes: N/A
SARA Toxic Chemical: Yes, (Strong manufacturing only)
CERCLA Reportable Quantity: 10,000 lbs (Default)

SECTION 16: Other Information

Prepared by: Cumberland Swan
Sources of Information: 29 CFR1910.1000; NIOSH Pocket Guide to Chemical Hazards (1993); Occupational Health Guidelines for Chemical Hazards; NFPA Guide to Hazardous Materials - 10th Edition.
Disclaimer: While reasonable care has been taken to ensure the accuracy and completeness of the information regarding the material described herein, it is the purchaser's responsibility to ensure the suitability of such information as it applies to the purchaser's intended use of the material.

Aaron Industries, Inc
WEST COAST DIVISION
11865 Alameda Street
Lynwood, CA 90262

MATERIAL SAFETY DATA SHEET

Information and Emergency Phone: 323-567-2482 Chemtrec: 800-424-9300

PRODUCT NAME: **70% ETHYL ALCOHOL**

PRODUCT NUMBER: **CF300-079**

Synonyms: **Ethyl, Rubbing Alcohol 70%**

---

01. Hazard Rating (4 = Extreme, 3 =High, 2 = Moderate, 1 = Slight)

- Health – 1
- Flammability – 2
- Reactivity - 0

02. Composition & Ingredients

Ingredients	CAS #
SDA 23-H (Special Denatured Alcohol)	64-17-5
Denatonium Benzoate	
Purified Water	

03. Physical Data

Characteristics	Description
Appearance	Clear Colorless Liquid
Odor	Alcoholic
Specific Gravity @ 15.56 ^{0}C	0.869 – 0.877
pH @ 25 ^{0}C	N/A
Vapor Pressure	44.6 mm Hg
Boiling Point	78.4 ^{0}C
Melting / Freezing Point	- 144 ^{0}C
Auto-Ignition Temperature	363 ^{0}C
Solubility in Water	Soluble
Percent Volatile By Weight	70%

04. Fire & Exposition

- Flash Point - 16 ^{0}C Close Up
- Flammable Limits - Lower: 3.3 vol% ; Upper: 19 vol%
- Flammability Classification – Combustible liquid as defined by the OHSA Hazard Communication Standard
- Hazardous Combustion Products – Carbon monoxide is expected to be the primary hazardous Combustion Product

- Special Conditions To Avoid – Ethanol vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Alcohols burn with a pale blue flame which may be extremely hard to see under normal lighting conditions. Personnel may only be able to feel the heat of the fire without seeing flames. Extreme caution must be exercised in fighting alcohol fires.
- Extinguishing Media – Use water spray, dry chemical, alcohol foam or CO_2
- Fire Fighting Instruction – Wear an approved positive pressure self-contained breathing apparatus and firefighter turnout gear. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Use water to keep fire exposed container cool until well after fire is out.

05. Hazards Identification

- Ethanol is not toxic by OSHA criteria. Coingestion of sedative hypnotics or tranquilizers can increase the toxic affects of ethanol.
- Eye – May produce transient severe eye irritation and pain.
- Skin – Defatting of the skin with irritation, dryness and cracking.
- Inhalation – Slight inhalation hazard
- Ingestion – Ingestion of large amount may produce signs of alcohol intoxication. Ingestion by children may lead to hypoglycemia
- Carcinogenicity -

06. Emergency & First Aid Procedures

- Eye – Immediately rinse eyes thoroughly with water for at least 15 minutes
- Oral Irritation – Discontinue use. See physician or dentist if symptoms persist
- Skin – Rinse with water, use soap if available. Remove contaminated clothing
- Ingestion / Intoxication – Seek medical attention if greater or equal to 2 ml/kg is ingested (e.g. greater or equal to 14 ml for a 7-kg child)
- Inhalation – N/A; Small amounts of the liquid aspirated into the respiratory system during ingestion or from vomiting, may cause bronchopneumonia pulmonary edema.

07. Accidental Release & Spill

- Personal Precautions: None Known
- Environmental Precautions: None Known
- Spill / Leak Clean-up – Dilute with Water. Keep away from ignition source. Flush down sewer with large quantities of water.

08. Exposure Controls & Personal Protection

- Engineering Controls – None required

- Personal Protective Equipment
  a. Eye – Safety glass
  b. Skin – None required
  c. Inhalation – Face mask

09. Handling and Storage

- Precautions for Safe Handling – Material must be isolated from potential sources of ignition. Fire fighting equipment must be available at all times.
- Conditions for Safe Storage - Storage area must be well ventilated, cool and dry.
- Other Recommendations – None

10. Stability and Reactivity

- Possible Hazardous Reactions – None Known
- Condition to Avoid – None Known
- Hazardous Decomposition Products – None Known
- Other Recommendation - None

11. Toxicological Information

- Not applicable under normal condition of use

12. Transport Information

- DOT Classification – Combustible liquid, not regulated in packages of less than 110 gallons. The product will not sustain combustion nor does it pose a significant fire hazard when used as intended

13. Additional Regulation Information

- 70% Ethyl Alcohol is a topic antiseptic regulated by the Food and Drug Administration. It is a combustible liquid within the definition of OSHA Hazard Communication standard

14. Other Information

- This Material Safety Data Sheet is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 34.00
Revision Date: May 6, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Aluminum

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Aluminum
Synonym: alumina fiber, aluminum powder
CAS#: 7429-90-5

SECTION 3 — HAZARDS IDENTIFICATION

Aluminum powder is a flammable solid.
Silvery odorless solid. Available as sheets, strips, foil, shots, wire, powder, and granules.
Avoid inhaling dust.

FLINN AT-A-GLANCE
Health-0
Flammability-0
Reactivity-2
Exposure-0
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Give large quantities of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Aluminum, as dust, is a flammable solid.
Powder Autoignition Temperature: 1400 °F
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
H-0
F-1
R-1

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. Remove all ignition sources. 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 #1. Store with metals and metal hydrides.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Silvery, odorless solid.
Specific Gravity: 2.70
Formula: Al
Formula Weight: 26.98

Melting Point: 660 °C
Boiling Point: 2327 °C

SECTION 10 — STABILITY AND REACTIVITY

Contact with acids liberates flammable hydrogen gas.
Avoid contact with acids, acid chlorides, oxidizers, and halogens.
Shelf Life: Indefinite.

SECTION 11 — TOXICOLOGICAL INFORMATION

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

ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping Name: Aluminum powder
Hazard Class: 4.1, Flammable solid
UN Number: UN1309
N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-072-3), RCRA code D001 (dust only).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 51.00
Revision Date: May 11, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Ammonium Carbonate

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Ammonium carbonate

CAS#: 506-87-6

SECTION 3 — HAZARDS IDENTIFICATION

Colorless, crystalline plates or lump. Ammonia odor.
Slightly irritating to body tissues. Avoid inhaling dust; it may cause respiratory irritation.

FLINN AT-A-GLANCE
Health-0
Flammability-0
Reactivity-1
Exposure-1
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Give large quantities of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.
Decomposes to ammonia and carbon dioxide at temperatures above 136 °F (58 °C).
When heated to decomposition, emits toxic fumes of NOx and NH_3.

NFPA CODE
None established

Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. 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 #4. Store with hydroxides, oxides, silicates, and carbonates.
Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White, crystalline plates or lump. Strong ammonia odor.
Solubility: Soluble in water. Decomposes in hot water.
Formula: $(NH_4)2CO_3$
Formula Weight: 96.09

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong acids. Decomposes in hot water.
Shelf life: Indefinite

SECTION 11 — TOXICOLOGICAL INFORMATION

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

ORL-RAT LD_{50}: 2150 mg/kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
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 (208-058-0).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Antacid

Effervescent Aspirin Pain Relief Tablets (421)

1. CHEMICAL PRODUCT / COMPANY IDENTIFICATION

Product Name: Effervescent Aspirin Pain Relief Tablets (421)
Description: Antacid & Pain Relief
CAS Number: Proprietary and not applicable to blends or mixtures

Company Identification: Tower Laboratories Ltd.
8 Industrial Park Road (P.O. Box 306)
Centerbrook, CT 06409
U.S.A.
Telephone: (860) 767-2127
Fax number: (860) 767-2129

2. COMPOSITION / INFORMATION ON INGREDIENTS

CAS Number	Ingredient Name	%Wt.	TLV
50-78-2	Aspirin	10	5.00 mg/m3 TWA
77-92-9	Citric Acid	31	Not established
144-55-8	Sodium Bicarbonate	59	Not established

OSHA PELs: Not Established

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Product poses little or no hazard if spilled and no unusual hazard if involved in a fire. See Potential Health Effects if the recommended dosage is exceeded.

POTENTIAL HEALTH EFFECTS (ACUTE and CHRONIC):

ACUTE EXPOSURE

Exceeding the recommended dosage may cause: rapid or deep breathing, confusion, agitation, nausea, vomiting, diminished hearing, ringing in the ears, hemorrhage, acid/base imbalances, coma, seizures, low blood pressure, irregular heartbeat, drowsiness, flushing, fever, convulsions. Allergic reactions are possible with symptoms of reddening, itching, rash, swelling of the face, throat or tongue, and breathing problems.

CHRONIC EXPOSURE

Chronic overexposure to this product may cause effects as noted under acute overexposure, disturbances in liver function, disturbances in kidney function.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

Do not take this product without first consulting a health professional, if you have one of the following conditions: Asthma, Allergic to aspirin, Gastrointestinal ulcers or bleeding, High blood pressure, Congestive heart failure, Kidney disorders, Taking prescription medications, Persons who are at risk for hemorrhage, Young children, the elderly and pregnant women may be more susceptible to the effects of this product, Children and teenagers with chickenpox or flu symptoms (consult a doctor about Reye's Syndrome), Persons consuming alcohol may be more susceptible to the effects of this product.

4. FIRST AID MEASURES

INHALATION FIRST AID: Not applicable.

SKIN CONTACT FIRST AID: Not applicable.

EYE CONTACT FIRST AID: In case of contact, flush with plenty of water for at least 15 minutes. Call a physician.

INGESTION FIRST AID: In case of overdose, contact your regional poison control center or physician immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Not flammable.

FLAMMABLE LIMITS IN AIR, % BY VOLUME: Not established.

AUTOIGNITION TEMPERATURE: Not applicable.

EXTINGUISHING MEDIA: Water

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

6. ACCIDENTAL RELEASE MEASURES

SPILLS PROCEDURE: Spills should be swept up and placed in appropriate containers for disposal. Avoid creating dusty conditions.

7. HANDLING AND STORAGE

RECOMMENDED STORAGE CONDITIONS: Room Temperature. Store in a dry place away from excessive heat.

SHELF LIFE: Do not use after expiration date.

HANDLING (PERSONNEL): Keep this and all drugs out of the reach of children. Avoid contact with eyes. Avoid contact with skin or clothing. Wash thoroughly after handling. Store in a dry place away from excessive heat. Reseal containers immediately after use. Use normal precautions for storage of a drug.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION SYSTEM: Under normal conditions of use, special ventilation is not required.

PERSONAL RESPIRATORS (NIOSH APPROVED): Under normal conditions for use, respiratory protection is not required.

SKIN PROTECTION: No special skin protection requirements during normal handling and use.

EYE PROTECTION: None for normal use.

AIRBORNE EXPOSURE LIMITS: Refer to OSHA PELs in Section 2 above.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Solid
ODOR: Odorless
SPECIFIC GRAVITY: Not Applicable
MELTING / FREEZING POINT: Not applicable
pH: Not applicable

COLOR: White
BOILING POINT: Not applicable
BULK DENSITY: Not applicable
VAPOR PRESSURE: Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable.

CONDITIONS TO AVOID: Avoid extreme heat. Avoid contact with moisture/water.

POLYMERIZATION: Will not occur.

SUBSTANCES TO AVOID: See carton for full directions and warnings.

DECOMPOSITION PRODUCTS: None known.

11. TOXICOLOGICAL INFORMATION

TOXICITY: No data available for this product.

TOXICITY OF ASPIRIN: Acute oral toxicity: LD50 => 1,100 mg/kg (Rat)

12. ECOLOGICAL INFORMATION

No data available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of material in accordance with federal, state and local requirements. (State and local disposal regulations may differ from federal disposal regulations.)

14. TRANSPORTATION INFORMATION

Per recommended practices and procedures for land, sea, and air transportation as recognized by the:
US Dept. of Transportation (DOT)
International Maritime Organization (IMO)
International Civil Aviation Organization (ICAO)

PROPER SHIPPING NAME: Nonprescription Drug

HAZARD CLASSIFICATION: Non-Regulated

15. REGULATORY INFORMATION

This product is exempt from TSCA Regulation when used for pharmaceutical application.
This product is exempt under SARA § 302 and § 311 and § 312 and § 313.

This material is not subject to the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

16. OTHER INFORMATION

HMIS Rating: Health – 1 Flammability – 0 Reactivity – 0

0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe

ADDITIONAL INFORMATION:

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS Standard (ANSI Z400.1-2005).

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Tower Laboratories Ltd. The data on this sheet are related only to the specific material designated herein. Tower laboratories Ltd. assumes no legal responsibility for use or reliance upon these data.

END OF MSDS

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 707.00
Revision Date: September 27, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Sodium Bicarbonate "Baking Soda"

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Sodium Bicarbonate

CAS#: 144-55-8

SECTION 3 — HAZARDS IDENTIFICATION

White powder or crystals (frequently in lumps). Odorless.
Slightly toxic by ingestion. Dust may be irritating to respiratory system.

FLINN AT-A-GLANCE
Health-1
Flammability-0
Reactivity-0
Exposure-1
Storage-1
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician, seek medical attention for further treatment, observation and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped give artificial respiration immediately.
Eye: Immediately flush with fresh water for 15 minutes.
External: Wash continuously with fresh water for 15 minutes.
Internal: Rinse out mouth, give 1 to 2 cups of water or milk, induce vomiting. After vomiting, give mixture of 2 Tbs. of activated charcoal mixed with one cup of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Noncombustible solid.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from area. Sweep up, place in 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 #4. Store with hydroxides, oxides, silicates and carbonates.
Store in a cool dry place. Store in a Flinn Chem-Saf bag.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron. Use exhaust ventilation to keep airborne concentrations low.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

White powder or crystals (frequently in lumps). Odorless.
Solubility: Soluble in water, not alcohol.
Formula: NaHCO3
Formula Weight: 84.01

Specific Gravity: 2.159
Melting Point: loses carbon dioxide at 270 C

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers and strong acids.
Shelf Life: Stable under dry storage conditions; slowly decomposes in moist air.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Gastrointestinal disturbances, irritating dust
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD50: 4220 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 consult with state and local regulations.
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 (205-633-8).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

SAFETY DATA SHEET

GlaxoSmithKline

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Material **BEANO TABLETS**

Synonyms BEANO REGULAR STRENGTH TABLETS * BEANO TABLETS (US AND CANADA) * BEANO ENZYME EN COMPRIMES * FORMULA NUMBER B2113 * ALPHA-GALACTOSIDASE, FORMULATED PRODUCT

Company Name GlaxoSmithKline, Corporate Environment, Health & Safety
980 Great West Road
Brentford, Middlesex TW8 9GS UK

UK General Information:	+44-20-8047-5000
Transport Emergency (EU)	+44-1865-407333
Medical Emergency	+1-612-221-3999, Ext 221
Information and Advice:	US number, available 24 hours Multi-language response

GlaxoSmithKline, Corporate Environment, Health & Safety
One Franklin Plaza, 200 N 16th Street
Philadelphia, PA 19102-1225 US

US General Information:	+1-888-825-5249
Transport Emergency (non EU)	+1-703-527-3887 US number, available 24 hours Multi-language response

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS RN	Percentage
ALPHA D-GALACTOSIDASE	9025-35-8	4.37
NON-HAZARDOUS INGREDIENTS	Unassigned	95.63

3. HAZARDS IDENTIFICATION

Fire and Explosion Expected to be non-combustible.

Health Handling this product in its final form presents minimal risk from occupational exposure.
Health effects information is based on hazards of components.

Environment No information is available about the potential of this product to produce adverse environmental effects.

4. FIRST-AID MEASURES

Ingestion Never attempt to induce vomiting. Do not attempt to give any solid or liquid by mouth if the exposed subject is unconscious or semi-conscious. Wash out the mouth with water. If the exposed subject is fully conscious, give plenty of water to drink. Obtain medical attention.

Inhalation	Physical form suggests that risk of inhalation exposure is negligible.
Skin Contact	Using appropriate personal protective equipment, remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical attention if skin reaction occurs, which may be immediate or delayed.
Eye Contact	Wash immediately with clean and gently flowing water. Continue for at least 15 minutes. Obtain medical attention.

NOTES TO HEALTH PROFESSIONALS

Medical Treatment	None.
Medical Conditions Caused or Aggravated by Exposure	None for occupational exposure.
Antidotes	No specific antidotes are recommended.

5. FIRE-FIGHTING MEASURES

Fire and Explosion Hazards	Not expected for the product, although the packaging is combustible.
Extinguishing Media	Water or foam extinguishers are recommended. Carbon dioxide or dry powder extinguishers may be ineffective.
Special Firefighting Procedures	For single units (packages): No special requirements needed. For larger amounts (multiple packages/pallets) of product: Since toxic, corrosive or flammable vapours might be evolved from fires involving this product and associated packaging, self contained breathing apparatus and full protective equipment are recommended for firefighters. If possible, contain and collect firefighting water for later disposal.
Hazardous Combustion Products	Toxic, corrosive or flammable thermal decomposition products are expected when the product is exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear protective clothing and equipment consistent with the degree of hazard.
Environmental Precautions	For large spills, take precautions to prevent entry into waterways, sewers, or surface drainage systems.
Clean-up Methods	Collect and place it in a suitable, properly labelled container for recovery or disposal.
Decontamination Procedures	No specific decontamination or detoxification procedures have been identified for this product.

7. HANDLING AND STORAGE

HANDLING

General Requirements	Avoid breaking or crushing tablets.
STORAGE	No storage requirements necessary for occupational hazards. Follow product information storage instructions to maintain efficacy.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	ALPHA D-GALACTOSIDASE
GSK Occupational Hazard Category	2

Other Equipment or Procedures	None required for normal handling. Wash hands and arms thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Colour	White/off-white.
Physical Form	Tablet.

10. STABILITY AND REACTIVITY

Stability	This product is expected to be stable.
Conditions to Avoid	None for normal handling of this product.

11. TOXICOLOGICAL INFORMATION

Oral Toxicity	Not expected to be toxic following ingestion.
Inhalation Toxicity	Inhalation toxicity is not expected.
Skin Effects	Irritation is not expected following direct contact.
Eye Effects	Irritation is not expected following direct contact with eyes.
Sensitisation	Sensitisation (allergic skin reaction) is not expected.
Genetic Toxicity	Not expected to be genotoxic under occupational exposure conditions.
Carcinogenicity	Not expected to produce cancer in humans under occupational exposure conditions. No components are listed as carcinogens by GSK, IARC, NTP or US OSHA.
Reproductive Effects	Not expected to produce adverse effects on fertility or development under occupational exposure conditions.
Other Adverse Effects	None known for occupational exposure.

12. ECOLOGICAL INFORMATION

Summary	No information is available about the potential of this product to produce adverse environmental effects. Local regulations and procedures should be consulted prior to environmental release.

13. DISPOSAL CONSIDERATIONS

Disposal Recommendations	Collect for recycling or recovery if possible. The disposal method for rejected products/returned goods must ensure that they cannot be re-sold or re-used.
Regulatory Requirements	Observe all local and national regulations when disposing of this product.

14. TRANSPORT INFORMATION

The SDS should accompany all shipments for reference in the event of spillage or accidental release. Only authorised persons trained and competent in accordance with appropriate national and international regulatory requirements may prepare dangerous goods for transport.

UN Classification and Labelling

Transport Information	Transportation and shipping of this product is not restricted. It has no known, significant hazards requiring special packaging or labelling for air, maritime, US or European ground transport purposes.

15. REGULATORY INFORMATION

The information included below is an overview of the major regulatory requirements. It should not be considered to be an exhaustive summary. Local regulations should be consulted for additional requirements.

EU Classification and Labelling

Exempt from requirements of EU Dangerous Preparations directive - product regulated as a medicinal product, cosmetic product or medical device.

US OSHA Standard (29 CFR Part 1910.1200)

Classification Exempt when packaged for sale to consumers in a retail establishment.

Other US Regulations

TSCA Status Exempt

16. OTHER INFORMATION

References GSK Hazard Determination

Date Approved/Revised 06-Jun-2007 **SDS Version Number** 7

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose.

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 102.00
Revision Date: May 19, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Benedicts Qualitative Solution

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Sodium citrate (68-04-2) 17-18%, sodium carbonate (497-19-8) 9-11%, copper(II) sulfate (7758-98-7) 1-2%, and water (7732-18-5) 73-69%

CAS#: None established

SECTION 3 — HAZARDS IDENTIFICATION

Light blue solution. Odorless.
Substance considered nonhazardous. However, not all health aspects of this substance have been thoroughly investigated.

FLINN AT-A-GLANCE
Health-0
Flammability-0
Reactivity-0
Exposure-0
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Give large quantities of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible liquid.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area and 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

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Light blue solution, odorless.
Contains: sodium carbonate, sodium citrate, copper(II) sulfate.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Indefinite.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant; 100 ml of this solution contains no more than 2000 mg of copper sulfate.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: 300 mg/kg (for $CuSO_4$)
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping Name: Not regulated
Hazard Class: N/A
UN Number: N/A
N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 121.00
Revision Date: May 20, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Biuret Test Solution

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Copper(II) sulfate pentahydrate (7758-99-8) 0.2%, sodium hydroxide (1310-73-2) 20% w/v, and water (7732-18-5) 80%

CAS#: None Established

SECTION 3 — HAZARDS IDENTIFICATION

Blue solution. Odorless.
Extremely corrosive to all body tissues. Toxic by ingestion. Avoid all body tissue contact.

FLINN AT-A-GLANCE
Health-2
Flammability-0
Reactivity-1
Exposure-2
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Give no more than 1-2 cups of water for dilution. Do not induce vomiting. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible liquid.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area and 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 #4. Store with hydroxides, oxides, silicates, and carbonates.
Store in a Flinn Chem-Saf bag.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Blue odorless solution.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Good.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Extremely corrosive.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
Flinn Suggested Disposal Method #10 is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping Name: Not regulated
Hazard Class: N/A
UN Number: N/A
N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Buffer Solution, pH 4.00 Red

MSDS # 129.00

ScholAR Chemistry

Section 1: Product and Company Identification

Buffer Solution, pH 4.00 Red

Synonyms/General Names: pH 4 Buffer
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Red liquid; no odor.

CAUTION! Body tissue irritant.
Target organs: None known

HMIS (0 to 4)

Health	**1**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Potassium Acid Phthalate, (877-24-7), 1-2% .
Sodium Hydroxide, (1310-73-2), <1%.
Water, (7732-18-5), 97-99%.
Red Food coloring, <1%.

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Noncombustible solution. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill with sand or absorbent material and place in sealed bag or container for disposal. Ventilate and wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Exposure guidelines: Sodium Hydroxide: OSHA PEL: 2 mg/m^3, ACGIH: TLV: N/A, STEL: 2 mg/m^3 ceiling.

Section 9: Physical and Chemical Properties

Molecular formula	N/A.	**Appearance**	Red liquid.
Molecular weight	N/A.	**Odor**	No odor.
Specific Gravity	1.00 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	0.7 (water).	**Solubility**	Complete.
Melting Point	Freezes @ ~ 0 °C.	**Evaporation rate**	N/A *(Butyl acetate = 1).*
Boiling Point/Range	~ 100°C.	**Partition Coefficient**	N/A *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	4.0.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Acids, alkalis,
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Sodium Hydroxide: LD50 [oral, rabbit]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed .
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***.

Buffer Solution, pH 10.00 Blue

MSDS # 123.00

ScholAR Chemistry

Section 1: Product and Company Identification

Buffer Solution, pH 10.00 Blue

Synonyms/General Names: pH 10 Buffer solution
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Blue liquid; no odor.

CAUTION! Body tissue irritant.
Target organs: None known

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Boric Acid, (10043-35-3), 0.32-0.51%.
Potassium Chloride, (7447-40-7), 0.39-0.4%.
Sodium Hydroxide, (1310-73-2 0), .08-0.38% .
Water, (7732-18-5), 99.1%.

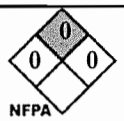
Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Noncombustible solution. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill with sand or absorbent material and place in sealed bag or container for disposal. Ventilate and wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skins, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an dust cartridge. Exposure guidelines: Sodium hydroxide: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	N/A.	**Appearance**	Blue liquid.
Molecular weight	N/A.	**Odor**	No odor.
Specific Gravity	N/A.	**Odor Threshold**	N/A.
Vapor Density (air=1)	0.7 (water).	**Solubility**	Complete.
Melting Point	Freezes @ ~ 0 °C.	**Evaporation rate**	N/A *(Butyl acetate = 1).*
Boiling Point/Range	~ 100°C.	**Partition Coefficient**	N/A *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	10.0, basic.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Acids, alkalis,
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Sodium hydroxide: LD50 [oral, rat]; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed.
WHMIS Canada: Not WHMIS Controlled.
TSCA: All components are listed or are exempt.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Scholar Chemistry

MATERIAL SAFETY DATA SHEET

5100 W. Henrietta Rd.
West Henrietta, NY 14586
TEL: (866) 260-0501

MSDS No. 9407206 9407306 9407406 9407506 9407508 9407606 9407605
Effective Date: April 1, 2004

SECTION I NAME

24 HOUR EMERGENCY ASSISTANCE

416-984-3000

Product	Calcium Chloride, Anhydrous
Chemical Synonyms	N/A
Formula	$CaCl_2$
CAS No.	10043-52-4

NFPA: 0 / 1 / 0

Health	1
Flammability	0
Reactivity	0

HAZARD RATING WHMIS

Minimal	Slight	Moderate	Serious	Severe
0	1	2	3	4

SECTION II DANGEROUS INGREDIENTS

Name	%	TLV Units
Calcium Chloride, Anhydrous: CAS # 10043-52-4	90-97%	N/A
Sodium Chloride: CAS # 7647-14-5	1-2%	N/A
Potassium Chloride: CAS # 7447-40-7	2-3%	N/A
Strontium Chloride: CAS # 10476-85-4	0-1%	N/A
Water: CAS # 7732-18-5	Bal.	N/A
CAUTION!		

SECTION III PHYSICAL DATA

Melting Point (°C)	772°C	Specific Gravity (H_2O = 1)	2.2
Boiling Point (°C)	815°C	Percent Volatile by Volume (%)	Negligible.
Vapor Pressure (mm Hg)	< 0.005 mmHg @ 20°C	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	Soluble.		
Appearance & Odor	White granular, pellets or lumps; no odor. Hygroscopic.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

			Lower	Upper
Flash point	Non-flammable.	Flammable Limits in Air % by Volume N/A		

Firefighting Procedures

Use dry chemical, CO_2, alcohol foam, or water spray. In fire conditions, fire-fighters should wear an appropriate mask or a self-containing breathing apparatus.

Flammability and Explosion Hazards

Fire or excessive heat may produce hazardous decomposition products to be produced as dust or fume.

TDG Not controlled under TDG.

SECTION V REACTIVITY DATA

CC0075

Chemical Stability	Yes X / No	If no, under what conditions?	
Incompatible with Other products	Yes X / No	Sulfuric acid, aluminum and ferrous metals.	
Hazardous Decomposition Products	Does not decompose.		
Reactive under what conditions	Corrosive to some metals such as brass, mild steel, contact with water generates heat.		

SECTION VI TOXICOLOGICAL PROPERTIES

Route of Entry	Ingestion. Inhalation.
TLV	N/A
Toxicity for animals	LD50: 967-1668 mg/kg oral-rat; LD50: > 5000 mg/kg skin-rabbit.
Chronic effects on humans	Repeated or prolonged exposure to the substance can produce target organ damage. Target organs: None known.
Acute effects on humans	May cause eye irritation, skin irritation. May irritate mucous membranes.

SECTION VII PREVENTIVE MEASURES

Waste Disposal	Discharge, treatment, or disposal may be subject to local laws. Consult your local or regional authorities.
Storage	Keep container dry. Keep in a cool place. Keep container tightly closed.
Precautions	Avoid contact with skin and eyes. DO NOT breathe dust. DO NOT ingest. If ingested, seek medical advice immediately.
Spill or leak	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Protective Clothing	Safety glasses, lab coat, dust respirator, gloves.

SECTION VIII FIRST AID MEASURES

Specific first aid measures

Ingestion: Call physician or Poison Control Center immediately. Induce vomiting only if advised by the appropriate medical personnel. Eye contact: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek medical attention. Skin contact: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Inhalation: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Allow victim to rest in a well ventilated area. Seek immediate medical attention.

SECTION IX PREPARATION OF THE MSDS

Rev. No. 3	Date April 1, 2004	Approved Michael Raszeja

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 211.50
Revision Date: November 17, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Carbon

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Carbon

CAS#: 7440-44-0

SECTION 3 — HAZARDS IDENTIFICATION

Black rod. Odorless.
Substance considered nonhazardous. However, not all health aspects of this substance have been thoroughly investigated.

FLINN AT-A-GLANCE
Health-0
Flammability-1
Reactivity-0
Exposure-0
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash with mild soap and water.
Internal: Rinse out mouth with water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Combustible solid.
Autoignition Temperature: 842 °F
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. Remove all ignition sources and water. 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 #4. Store with hydroxides, oxides, silicates, and carbonates.
Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Black rod. Odorless.
Solubility: Insoluble in water.
Formula: C
Formula Weight: 12.01

Specific Gravity: 1.821-2.1
Boiling Point: 4200 °C

SECTION 10 — STABILITY AND REACTIVITY

Avoid heat, flame, and oxidizing agents.
Shelf life: Good, if kept dry.

SECTION 11 — TOXICOLOGICAL INFORMATION

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

ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
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

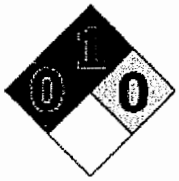
TSCA-listed, EINECS-listed (231-153-3).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Material Safety Data Sheet



Specimens in Carosafe®

Revised: 07/13/2010
Replaces: 05/09/2010
Printed: 07/20/2010

Carolina Biological Supply Company
2700 York Rd | Burlington, NC 27215 • to order: 800.334.5551 • for support: 800.227.1150

CAROLINA
www.carolina.com

Section 1 - Product Description

Product Name: Specimens in Carosafe®
Product Code(s): Various
Size: Various
Chemical Name: N/A
CAS Number: See Section 3
Formula: See Section 3
Synonyms: N/A
Distributor: Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215
Chemical Information: 800-227-1150 (8am-5pm (ET) M-F) **Chemtrec** 800-424-9300 (Transportation Spill Response 24 hours)

Section 2 - Hazard Identification

Emergency Overview: Irritating to eyes and skin. Harmful by inhalation and if swallowed.
Potential Health Effects:
Eyes: May cause irritation.
Skin: May cause irritation to skin.
Ingestion: May cause gastrointestinal discomfort.
Inhalation: May cause irritation to respiratory tract.

Section 3 - Composition / Information on Ingredients

Principal Hazardous Components: The specimen will contain some residual formaldehy; Ethylene Glycol Phenyl Ether (CAS# 122-99-6); 2-amino-2-ethyl-1,3-propanediol (CAS# 115-70-8); Propylene Glycol (CAS# 57-55-6)
TLV units: (Formaldehyde) ACGIH-TLV 0.3 ppm
(Ethylene Glycol Phenyl Ether) N/A
(2-amino-2-ethyl-1,3-propanediol) N/A
(Propylene Glycol) N/A
PEL units: (Formaldehyde) OSHA-PEL 0.75 ppm
(Ethylene Glycol Phenyl Ether) OSHA-PEL N/A
(2-amino-2-ethyl-1,3-propanediol) OSHA-PEL N/A
(Propylene Glycol) OSHA-PEL N/A

Section 4 - First Aid Measures

Emergency and First Aid Procedures:

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

Skin - After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (Water, unless specified as a water reactive material).

Ingestion - If swallowed, rinse mouth with water (only if the person is conscious). If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Inhalation - In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Section 5 - Firefighting Procedures

Flash Point (Method Used): N/A

NFPA Rating:

Health: 0

Fire: 1

Reactivity: 0

Extinguisher Media: Use dry chemical, CO2 or appropriate foam.

Flammable Limits in Air % by Volume: N/A

Autoignition Temperature: N/A

Special Firefighting Procedures: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

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

Section 6 - Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled: Ventilate area of spill. Eliminate all sources of ignition. Remove all non-essential personnel from area. Clean-up personnel should wear proper protective equipment and clothing. Absorb material with suitable absorbent and containerize for disposal.

Section 7 - Special Precautions

Precautions to Take in Handling or Storing: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

Avoid contact with clothing.

Avoid contact with skin and eyes.

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

Section 8 - Protection Information

Respiratory Protection (Specify Type): None needed under normal conditions of use with adequate ventilation. A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.

Ventilation:

Local Exhaust: Yes

Mechanical(General): Yes

Special: No

Other: No

Protective Gloves: Natural rubber, Neoprene, PVC or equivalent.

Eye Protection: Splash proof chemical safety goggles should be worn.

Other Protective Clothing or Equipment: Lab coat, apron, eye wash, safety shower.

Section 9 - Physical Data

Molecular Weight: N/A

Boiling Point: N/A

Melting Point: N/A

Vapor Pressure: N/A

Vapor Density(Air=1): N/A
Percent Volatile by Volume: N/A
Solubility in Water: Soluble

Specific Gravity (H2O=1): >1
Evaporation Rate (BuAc=1): N/A
Appearance and Odor: Colorless, odorless solution.

Section 10 - Reactivity Data

Stability: Stable
Conditions to Avoid: Heat and sources of ignition.
Incompatibility (Materials to Avoid): Bases, Heavy Metals, Metals, Oxidizers, Water-reactive Material,
Hazardous Decomposition Products: NOx, COx,
Hazardous Polymerization: Will not occur

Section 11 - Toxicity Data

Toxicity Data: (Formaldehyde) orl-rat LD50 500 mg/kg
(Propylene Glycol) orl-rat LD50 20,000 mg/kg
Effects of Overexposure:
Acute: See Section 2
Chronic: Tumorigenic data cited. Reproductive data cited. Mutation data cited. Certain components or species of this product are considered potential carcinogens.
Conditions Aggravated by Overexposure: N/A
Target Organs: N/A
Primary Route(s) of Entry: Ingestion, skin and eye contact.

Section 12 - Ecological Data

PA Waste Numbers: N/A

Section 13 - Disposal Information

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

Section 14 - Transport Information

DOT Proper Shipping Name: N/A

Section 15 - Regulatory Information

EPA TSCA Status: On TSCA Inventory
Hazard Category for SARA Section 311/312 Reporting: Acute Chronic
WARNING: This product contains a material known to the state of California to cause cancer.

Name List:
Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1,3-propanediol - No
Formaldehyde - Yes
Propylene Glycol - No

Chemical Category:
Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1,3-propanediol - No
Formaldehyde - No
Propylene Glycol - No

CERCLA Section 103 RQ(lb.): Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1,3-propanediol - No

Formaldehyde - 100
Propylene Glycol - No
RCRA Section 261.33: Ethylene Glycol Phenyl Ether - No
2-amino-2-ethyl-1,3-propanediol - No
Formaldehyde - Yes
Propylene Glycol - No

Section 16 - Additional Information

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. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

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

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 228.00
Revision Date: June 15, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Charcoal

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Charcoal
Synonym: activated carbon
CAS#: 7440-44-0

SECTION 3 — HAZARDS IDENTIFICATION

Black powder, granule, or lump. Odorless.
Dust hazardous by inhalation.
Flammable solid as dust. Avoid any source of ignition.

FLINN AT-A-GLANCE
Health-1
Flammability-2
Reactivity-1
Exposure-1
Storage-2
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Rinse out mouth, give 1 to 2 cups of water or milk, and induce vomiting. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Flammable solid as a dust.
Autoignition Temperature: 842 °F
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. Remove all ignition sources and water . 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 #4. Store with hydroxides, oxides, silicates, and carbonates.
Store in Flinn Chem-Saf bag, in a Flinn Saf-Stor can. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and a chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Black powder, granule, or lump. Odorless.
Solubility: Insoluble in water.
Formula: C
Formula Weight: 12.01

Boiling Point: 4200 °C
Specific Gravity: 1.821-2.1

SECTION 10 — STABILITY AND REACTIVITY

Avoid heat, flame, and oxidizing agents.
Shelf life: Good, if kept dry.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritating dust.
Chronic effects: N.A.
Target organs: N.A.

ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping Name: Charcoal
Hazard Class: 4.2, Spontaneously combustible
UN Number: NA1361
N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (231-153-3).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Copper

MSDS # 231.50

ScholAR Chemistry

Section 1: Product and Company Identification

Copper

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Reddish brown metal shot, granules, sheet, foil, turnings, strips or screenings; no odor

This material is not considered hazardous.
Target organs: Liver, kidneys

HMIS (0 to 4)

Health	**0**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Copper Metal (7440-50-8), 100%

Section 4: First Aid Measures

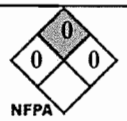
Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Copper : OSHA PEL: 1 mg/m^3, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	Cu.	**Appearance**	Reddish brown metal .
Molecular weight	63.55.	**Odor**	None.
Specific Gravity	8.92 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	N/A.
Melting Point	1083°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	2595°C.	**Partition Coefficient**	N/A . *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers, acids, bromates, chlorates, iodates, acetylene and halogens.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Copper : LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-159-6).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 285.00
Revision Date: June 25, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Copper(II) Sulfate

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Copper(II) sulfate, pentahydrate
Synonym: cupric sulfate, blue vitiol, chalcanthite
CAS#: 7758-99-8

SECTION 3 — HAZARDS IDENTIFICATION

Blue, crystalline powder, granules or larger crystals. Odorless.
Skin and respiratory irritant; moderately toxic by ingestion and inhalation.

FLINN AT-A-GLANCE
Health-2
Flammability-0
Reactivity-0
Exposure-2
Storage-1
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Rinse out mouth, give 1 to 2 cups of water or milk, and induce vomiting. After vomiting, give mixture of 2 Tbs. of activated charcoal mixed with one cup of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solid.
However, sulfur trioxide can be produced at temperatures above 653 °C.
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. 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 #2. Store with acetates, halides, sulfates, sulfites, thiosulfates, and phosphates. Efflorescent. Protect from air, store in a Flinn Chem-Saf bag. Use and dispense in a hood.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and a chemical-resistant apron.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Blue, crystalline powder, granules or larger crystals. Odorless.
Solubility: Soluble in water and methanol; slightly in alcohol.
Formula: $CuSO_4$ $5H_2O$
Formula Weight: 249.69
Specific Gravity: 2.28

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with finely powdered metals and heat. Will corrode steel.
Shelf Life: Fair, slowly effloresces in air.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Toxic, severe eye irritant, and gastrointestinal disturbances.
Chronic effects: Possible mutagen.
Target organs: Liver, kidneys, and blood.

ORL-RAT LD_{50}: 300 mg/Kg
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
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 (231-847-6).

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Corn Starch

MSDS # 234.00

ScholAR Chemistry

Section 1: Product and Company Identification

Corn Starch

Synonyms/General Names: Starch, soluble
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White powder, bland odor.

This material is not considered hazardous.
Target organs: None

HMIS (0 to 4)

Health	**0**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Starch, soluble (9005-84-9), 100%

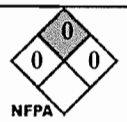
Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Corn Starch: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	$(C_6H_{10}O_5)_n$.	**Appearance**	White powder.
Molecular weight	N/A.	**Odor**	Bland odor.
Specific Gravity	1.45 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water.
Melting Point	N/A.	**Evaporation rate**	N/A . *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: N/A
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Corn Starch: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed .
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***.

Material Safety Data Sheet

This MSDS Sheet complies with the style format specified by ANSI Z400.1-1993

SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

Damp Rid, Inc.
7701 Southland Blvd.
Orlando, Florida 32809
(407)851-6230
(800)621-2943

(800) 424-9300 - CHEMTREC (24 Hour Emergency Response)

PRODUCT: Damp Rid® FG03
DAMP RID PRODUCT CODE: FG01, FG02, FG23, FG30, FG42, FG45, FG60, FG80, FG83, FG100
TRADE NAMES/SYNONYMS: Damp Rid®
CHEMICAL FAMILY: Inorganic Salt
MSDS CREATION DATE: 30 ARP 93
MSDS REVISION DATE: 29 NOV 00

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS: Calcium Chloride, Sodium Chloride, Potassium Chloride, Water
CAS NUMBER: 10043-52-4 (Calcium Chloride), 7647-14-5 (Sodium Chloride), 7447-40-7 (Potassium Chloride), 7732-18-5 (Water)

PERCENTAGE:		
	Calcium Chloride	77 – 80%
	Sodium Chloride	1 – 2%
	Potassium Chloride	2 – 3%
	Water	15 - 20%

SECTION 3: HAZARDS IDENTIFICATION

NFPA RATINGS: (SCALE 0-4): HEALTH=1, FIRE=0, REACTIVITY=1
EMERGENCY OVERVIEW: Colorless to white, deliquescent crystals. Odorless. May cause skin burns and respiratory tract and eye irritation. Do not get in eyes, on skin or on clothing. May be harmful if swallowed. Reacts with water to liberate heat.

POTENTIAL HEALTH EFFECTS:
INHALATION:
Short Term Effects: May cause irritation.

Long Term Effects: Same effects as short term exposure.

SKIN CONTACT:

Short Term Effects: May cause irritation.

Long Term Effects: Same effects as short term exposure.

EYE CONTACT:

Short Term Effects: May cause irritation. Additional effects may include tearing.

Long Term Effects: Same effects as short term exposure.

INGESTION:

Short Term Effects: May cause nausea.

Long Term Effects: No information available on significant adverse effects.

CARCINOGEN STATUS:

OSHA: No **NTP:** No **IARC:** No

SECTION 4: FIRST AID MEASURES

INHALATION: Remove from exposure area to fresh air immediately. Treat symptomatically and supportively. If required, get medical attention immediately.

SKIN CONTACT: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). If required, get medical attention immediately.

EYE CONTACT: Flush eyes immediately with large amounts of water or normal saline solution, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). If required, get medical attention immediately.

INGESTION: Treat symptomatically and supportively. Get medical attention immediately. If vomiting occurs, keep head lower than hips to prevent aspiration.

NOTE TO PHYSICIAN: Antidote:

No specific antidote. Treat symptomatically and supportively.

SECTION 5: FIRE FIGHTING MEASURES

FIRE HAZARD: Not Applicable.

FIREFIGHTING: Extinguish fire using agent suitable for type of surrounding fire and/or chemicals.

HAZARDOUS COMBUSTION PRODUCTS: Product generates heat upon addition of water, with possible spattering. Product may react with some metals (aluminum, zinc, tin, etc.).

SECTION 6: ACCIDENTAL RELEASE MEASURES

In case of spill, soak up liquid with a damp sponge or towel. Small quantities may be flushed away with plenty of water. For spills deep in carpet, soak with water, press dry with a towel. Repeat if necessary. Wash or dry clean fabrics as usual. Walking surfaces may remain wet longer due to moisture being held by spilled product.

SECTION 7: HANDLING AND STORAGE

Wash after handling. When handling, control dust and loose flakes by filling DAMP RID® containers over a sink. When exposed to the atmosphere, calcium chloride solution will be formed which can damage leather items such as shoes, handbags and fur coats. Avoid using product in a manner where accidental contact with these materials may occur. For storage of unused flakes, seal container and place in a cool, dry area.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS: No occupational exposure limits established by OSHA/ACGIH/NIOSH.
VENTILATION: No special ventilation is required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Colorless to White, deliquescent crystals.
FORMULA: $CaCl_2$
MOLECULAR WEIGHT: 110.99
MELTING POINT: 345°F (>174°C)
SPECIFIC GRAVITY: 1.85 @ 77°F (25°C)
WATER SOLUBILITY: 40% @ 68°F (20°C) with evolution of heat
SOLVENT SOLUBILITY: Soluble in alcohol, acetic acid and acetone

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Liberates heat with water.
INCOMPATIBILITIES: Calcium Chloride will corrode most metals exposed to air; attack aluminum (and its alloys) and yellow brass.
HAZARDOUS DECOMPOSITION: Thermal decomposition products may include toxic and corrosive fumes of chlorine.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA (ANHYDROUS CALCIUM CHLORIDE):

TD_{LO}: 112g/kg, oral, 20 weeks, rat
LD_{LO}: 274 mg/kg, subcutaneous, dog
LD_{50}: 1000 mg/kg, oral, rat
LD_{50}: 264 mg/kg, intraperitoneal, rat
Mutagenic data and tumorigenic data-see Registry of Toxic Effects of Chemical Substances (RTECS) file.

CARCINOGEN STATUS: None.
LOCAL EFFECTS: Calcium Chloride is an eye, mucous membrane and skin irritant.
ACUTE TOXICITY LEVEL: Moderately toxic by ingestion, slightly toxic by dermal absorption.
TARGET EFFECTS: No data available.
INHALATION:
Acute Exposure: Inhalation of dust may cause irritation with coughing and shortness of breath.
Chronic Exposure: Same as acute exposure.
SKIN CONTACT:
Acute Exposure: Single, short exposure not likely to cause significant skin irritation. However, direct contact with dust or solutions may cause severe irritation. The degree of irritation depends on the concentration and duration of contact.
Chronic Exposure: Same as acute exposure.
EYE CONTACT:
Acute Exposure: Direct contact may cause irritation.
Chronic Exposure: Repeated or prolonged exposure may result in conjunctivitis.
INGESTION:
Acute Exposure: May cause abdominal spasms and nausea. Overdose may cause gastrointestinal tract or cardiovascular irregularities.
Chronic Exposure: No adverse effects have been reported from its use as a food additive.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT RATING (0-4): No data available.
ACUTE AQUATIC TOXICITY: No data available.
DEGRADABILITY: No data available.
LOG BIOCONCENTRATION FACTOR (BCF): No data available.

LOG OCTANOL/WATER PARTITION COEFFICIENT: No data available.

SECTION 13: DISPOSAL INFORMATION

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

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name-ID Number: Non-regulated.

SECTION 15: REGULATORY INFORMATION

	TSCA STATUS:	Yes
	DSL STATUS:	Yes
	EINECS STATUS:	Yes
40 CFR 302.4	CERCLA SECTION 103:	No
40 CFR 355.30	SARA SECTION 302:	No
40 CFR 355.40	SARA SECTION 304:	No
40 CFR 372.65	SARA SECTION 313:	No
29 CFR 1910.119	OSHA Process Safety:	No
	California Proposition 65	No
40 CFR 370.21	SARA HAZARD CATEGORIES, SARA SECTIONS 311.312	
	ACUTE HAZARD:	Yes
	CHRONIC HAZARD:	No
	FIRE HAZARD:	No
	REACTIVITY HAZARD:	Yes
	SUDDEN RELEASE HAZARD:	No

SECTION 16: OTHER INFORMATION

Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

Material Safety Data Sheet

This MSDS Sheet complies with the style format specified by ANSI Z400.1-1993

This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

Damp Rid, Incorporated reserves the right to refuse shipment of this product to any consumer who fails to demonstrate the ability to consistently handle and use it safely and in compliance with all applicable laws, rules and regulations. Such demonstration may require on-site inspection of any or all storage, processing, packaging and other handling systems that come in contact with it.

Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.

SAFETY DATA SHEET

122000007045

Diastix

Version 3.0 Revision Date 06/29/2010

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Product Name: DiastixMSDS Number:122000007045
Use : In Vitro diagnostic reagent.

Company
BAYER HEALTHCARE LLC
Diabetes Care
555 White Plains Road
Tarrytown, NY 10591
UNITED STATES
(800) 348-8100

In case of emergency: Call Chemtrec
Chemtrec: (800) 424-9300
BAYER INFORMATION PHONE:(800) 348-8100

2. HAZARDS IDENTIFICATION

Emergency Overview

Form: solid Test strips **Odour:** odourless.

Hazard Communication (29CFR 1910.1200)

According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.

Acute Effects of Exposure	None known.
Chronic Effects of Exposure	None known.
Other Effects of Exposure	None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

4. FIRST AID MEASURES

General advice: No hazards which require special first aid measures.

If inhaled: Not an expected entry route.

In case of skin contact: Not considered a health risk.

In case of eye contact: Not considered a health risk.

If swallowed: Give two glasses of water or milk for dilution. Obtain medical attention.

Contact Number: Use the Bayer Emergency Number in Section 1

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Any

Specific hazards during fire fighting: Fire may cause evolution of: Carbon monoxide Carbon dioxide (CO2)

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment.

Methods for cleaning up: Place in closed containers. Label for proper disposal.

7. HANDLING AND STORAGE

Handling:
No special precautions required.

Storage:
Store at temperatures and conditions as indicated on the product label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection:
not required

Hand protection:
not required

Other protective measures:
No special protective equipment required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Test strips
Odour:	odourless
Melting point:	no data available
Density:	no data available
Bulk density:	no data available
Vapour pressure:	not applicable
Water solubility:	insoluble
pH:	not applicable
Partition coefficient (n-octanol/water):	no data available
Solubility in organic solvents:	no data available
Flash point:	not applicable
Ignition temperature:	not applicable

10. STABILITY AND REACTIVITY

Conditions to avoid: The enclosed instructions for use should be consulted prior to use.

Materials to avoid: Oxidizing agents

Hazardous reactions: None known.

Thermal decomposition:

no data available

Hazardous decomposition products:
Carbon monoxide, Carbon dioxide (CO2)

Auto-flammability:
no data available

11. TOXICOLOGICAL INFORMATION

Other information on toxicity:

No data is available on the product itself.

According to our experience and information the product has no harmful effects on health if properly handled.

12. ECOLOGICAL INFORMATION

General advice:
No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

14. TRANSPORT INFORMATION

Land transport (DOT)
Non-Regulated

Inland waterway transport
Non-Regulated

Railway transport
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO / IATA cargo aircraft only)
Non-Regulated

Air transport (ICAO / IATA passenger and cargo aircraft)
Non-Regulated

15. REGULATORY INFORMATION

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)
Components
None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required
Components
None

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components
None

California Prop. 65

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

OSHA Hazcom Standard Rating Non-Hazardous

16. OTHER INFORMATION

HMIS Rating

Health	0
Flammability	0
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
* = Chronic Health Hazard

Further information

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

Diastix® Reagent Strips/Technical Information

A Visual Urine Test for Glucose

SUMMARY AND EXPLANATION:

DIASTIX® Reagent Strips provide a fast, convenient way of testing urine for the presence and concentration of glucose.[1,2,3] Test results provide information on carbohydrate metabolism.

The reagent test area on DIASTIX is ready to use upon removal from the bottle. When dipped in urine, the test area changes color according to the amount of glucose in the urine. The reagent strips must be kept in the bottle with the cap closed tightly to provide optimal results. Use of DIASTIX Reagent Strips can alert you and your doctor to changes in your condition for which adjustments in your diet and/or medication may be needed. Carefully follow the testing schedule your doctor establishes.

CHEMICAL PRINCIPLES OF THE PROCEDURE:

This test is based on a double sequential enzyme reaction. One enzyme, glucose oxidase, catalyzes the formation of gluconic acid and hydrogen peroxide from the oxidation of glucose. A second enzyme, peroxidase, catalyzes the reaction of hydrogen peroxide with a potassium iodide chromogen to oxidize the chromogen to colors ranging from green to brown.

REAGENTS:

At the time of impregnation, 2.2% w/w glucose oxidase (microbial, 1.3 IU); 1.0% w/w peroxidase (horseradish, 3300 IU); 8.1% w/w potassium iodide; 69.8% w/w buffer; 18.9% w/w nonreactive ingredients.

WARNINGS AND PRECAUTIONS:

DIASTIX Reagent Strips are for *in vitro* diagnostic use. They have been determined to be nonhazardous under the guidelines issued by OSHA in 29CFR 1910.1200(d).

STORAGE:

Store at temperatures between 59°-86°F (15°-30°C) and out of direct sunlight. Use within 6 months after first opening. Always write the date you first opened the bottle on the bottle label. Do not use product (opened or unopened) after expiration date. Use of strips beyond expiration date may yield low results.

RECOMMENDED PROCEDURES FOR HANDLING DIASTIX:

All unused strips must remain in the original bottle. Transfer to any other container may cause reagent strips to deteriorate and become unreactive. Do not remove desiccant. Replace cap immediately and tightly after removing reagent strip. Do not touch test area of the reagent strip. Keep reagent test area away from detergents that may be found in specimen containers and other contaminating substances found in working areas. Dip test area in urine completely, but briefly, to avoid dissolving out reagents. Read test result carefully within 30 seconds, in a good light and with the test area held near the Color Chart on the bottle label.

IMPORTANT: PROTECTION AGAINST AMBIENT MOISTURE, LIGHT AND HEAT IS ESSENTIAL TO GUARD AGAINST ALTERED REAGENT REACTIVITY. Discoloration or darkening of reagent areas may indicate deterioration. If proper results are not obtained with positive and/or negative controls, discard bottle and contents and retest with fresh reagent strips.

SPECIMEN COLLECTION AND PREPARATION:

Collect urine in a clean container and test it as soon as possible. If testing cannot be done within an hour after voiding, refrigerate the specimen immediately and let it return to room temperature before testing. Prolonged exposure of unpreserved urine to room temperature may result in microbial contamination and bacterial consumption of urine glucose. Some preservatives do not adequately protect glucose from being metabolized by contaminating or infecting organisms. Urine preservatives may affect test results. Further information regarding the affects of urine preservatives on Bayer Diagnostics urinalysis products may be obtained by writing our Customer Service Department or by calling toll free 1-800-348-8100 and requesting Technical Report No. 8-82.

QUALITY CONTROL IN PROFESSIONAL USE:

To check DIASTIX Reagent Strip reactivity, use CHEK-STIX® Positive and Negative Control Strips.

RESULTS:

Results with DIASTIX Reagent Strips are obtained directly from comparison to the Color Chart. The color blocks represent nominal values; actual values will vary around the nominal values. Results are read from the Color Chart as negative or varying degrees of positive which indicate the relative amounts of glucose present. Color blocks are designated as Negative, 1/10% (100 mg/dL), 1/4% (250 mg/dL), 1/2% (500 mg/dL), 1% (1000 mg/dL) and 2% or more (2000 mg/dL or more).

LIMITATIONS OF PROCEDURES:

As with all laboratory tests, definitive diagnostic or therapeutic decisions should not be based on any single result or method. DIASTIX results should never be used as the sole basis for adjusting insulin dosage.

Substances that cause abnormal urine color, such as drugs containing azo dyes (e.g., Pyridium*, Azo Gantrisin*, Azo Gantanol*), nitrofurantoin (Macrodantin*, Furadantin*), and riboflavin, may affect the readability of the glucose reagent area on urinalysis reagent strips. The color development on the reagent pad may be masked, or a color reaction may be produced on the pad that could be interpreted as a false positive.

Ascorbic acid concentrations of 50 mg/dL or greater may cause false negatives for specimens containing small amounts of glucose (75-125 mg/dL). Ketone bodies reduce the sensitivity of the test; moderately high ketone levels (40 mg/dL) may cause false negatives for specimens containing small amounts of glucose (75-125 mg/dL), but the combination of such ketone levels and low glucose levels is metabolically improbable in screening. The reactivity of the glucose test decreases as the SG of the urine increases. Reactivity may also vary with temperature.

EXPECTED VALUES:

Small amounts of glucose are normally excreted by the kidney.[4] These amounts are usually below the sensitivity of this test but on occasion may produce a color between the negative and the 100 mg/dL color blocks. Results of 100 mg/dL may be significantly abnormal if found consistently.

SPECIFIC PERFORMANCE CHARACTERISTICS:

Specific performance characteristics are based on clinical and analytical studies. In clinical specimens, the sensitivity depends upon several factors: the variability of color perception; the presence or absence of inhibitory factors typically found in urine, the specific gravity, and the pH (see LIMITATIONS OF PROCEDURES section); and the lighting conditions under which the product is read. Because the color of each reagent area changes as the analyte concentration increases, the percentage of specimens detected as positive will increase with the analyte concentration.

Each color block represents a range of values. Because of specimen and reading variability, specimens with analyte concentrations that fall between nominal levels may give results at either level. Results at levels greater than the second positive level will usually be within one level of the true concentration.
The generally detectable level of glucose in contrived urine is 75-125 mg/dL; however, because of the inherent variability of clinical urines, lesser concentrations may be detected under certain conditions.

The test is specific for glucose; no substance excreted in urine other than glucose is known to give a positive result. The reagent area does not react with lactose, galactose, fructose nor reducing metabolites of drugs (e.g., salicylates and nalidixic acid). This test may be used to determine whether the reducing substance found in urine is glucose. In dilute urines containing less than 5 mg/dL ascorbic acid, as little as 40 mg/dL glucose may produce a color change that might be interpreted as positive. Reactivity may be influenced by urine specific gravity and temperature. The test is more sensitive than the copper reduction test, CLINITEST® Reagent Tablets. If the color appears somewhat mottled at the higher glucose concentrations, match the darkest color to the color blocks.

AVAILABILITY:

DIASTIX Reagent Strips are available in bottles of 50 strips (#2806) and 100 strips (#2803).

BIBLIOGRAPHY:

1. Free, A. H. and Free, H. M.: Urinalysis, critical disciplines of Clinical Science; *CRC Crit. Rev. Clin. Lab. Sci.* 3(4): 481-531, Dec., 1972.
2. Court, J. M., Davies, H. E. and Ferguson, R.: Diastix and Keto-Diastix, A new semiquantitative test for glucose in urine; *Med. J. Aust.* 1:525-528, March, 1972.
3. Traisman, H. S. and Greenwood, R. D.: A comparative clinical evaluation of a new proprietary method for urine testing in juvenile diabetics. *Clin. Pediatrics* 12:357, 1973.
4. Schersten, B. and Fritz, H.: Subnormal Levels of Glucose in Urine. *JAMA 201:* 129-132; 1967.

Bayer Corporation
Diagnostics Division
Elkhart, IN 46515 USA

Chemical reagent manufactured in the U.S., cut and assembled in the U.K.

MATERIAL SAFETY DATA SHEET

Product identity: **Dried Egg Whites – All Types (code #2010, #2110, #2210)**

SECTION 1 – MANUFACTURER INFORMATION

Manufacturer: **Ballas Egg Products Corp.**
40 North Second St.
Zanesville, Ohio 43701

Telephone No.: **(740) 453-0386**
Emergency Telephone No: **(740) 453-0386**
Date Prepared: **6/26/2001**

SECTION 2 – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous components: **None applicable**

SECTION 3 – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling point: **Not applicable**
Vapor Pressure: **Not applicable**
Vapor Density: **Not applicable**
Solubility in Water: **100%**
Specific Gravity: **Approx. 1.04 (Liquid and Frozen Egg Products)**
Density: **Approx. 26.6 lbs./ft^3 (Dried Egg Products)**
Melting Point: **Not applicable**
Evaporation Rate: **Not applicable**
Appearance: **White in color; Odor typical of dried eggs**

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash Point: **Non-Flammable**
Flammable Limits: **Not applicable**
Extinguishing Media: **Use extinguishing media appropriate for the surrounding fire.**
Special Fire Fighting Procedures: **Not applicable**
Unusual Fire/Explosion Hazards: **Not applicable**

SECTION 5 – REACTIVITY DATA

Stable: **Yes**
Conditions to avoid: **Not applicable**
Incompatibility: **Not applicable**
Hazardous Decomposition By Products: **Spoiled egg products may create sulfur dioxide and/or ammonia vapors.**
Hazardous Polymerization: **Not applicable**

MATERIAL SAFETY DATA SHEET

Product identity: **Dried Egg Whites – All Types (code #2010, #2110, #2210)**

SECTION 6 – HEALTH HAZARD DATA

Inhalation:	**Avoid breathing dust or spray mist.**
Eyes:	**Avoid contact with eyes.**
Skin:	**Not applicable**
Ingestion:	**Not applicable**
Health Hazards:	**Not applicable**
Carcinogenicity:	**Not applicable**
Signs and Symptoms of Exposure:	**Not applicable**
Medical Conditions Aggravated By Exposure:	**Persons with severe allergies may be sensitive to egg products, especially egg whites.**
Emergency and First Aid Procedures:	**Eyes: Immediately flush eyes with plenty of water for at least 15 minutes.**

SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE

Waste Disposal Method:	**Spilled material may be discarded with other solid waste without additional restrictions. Disposal into sanitary sewers must be done in accordance with all applicable laws.**
Precautions To Be Taken In Storage and Handling:	**Store according to recommendations on label. Product labeled "FROZEN" must be stored at O°F to 10°F until ready to thaw for use. Product labeled "LIQUID" must be stored at 40°F or below at all times. Do not refreeze egg products once thawed. Do not exceed recommended shelf life. Do not allow material to spoil inside an enclosed vessel.**

SECTION 8 – CONTROL MEASURES

Respiratory Protection:	**Approved dust mask as required; exposure 15mg/m^3 per CFR 1910.1001.**
Ventilation:	**Not applicable**
Protective Gloves:	**Not applicable**
Eye Protection:	**Safety goggles with all powdered product.**
Other Protective Clothing or Equipment:	**Not applicable**

Last update: 12/16/06

Material Safety Data Sheet

Sanford Corporation
2711 Washington Boulevard
Bellwood, IL 60104

Telephone Number:	1-800-323-0749
Initiated By:	Susan Nyborg
Date of Last Revision:	June 1, 2001
Medical Emergency No:	1-800-228-5635

Section One: Product Identification

Product Name	Expo$_R$ Cleaner for Dry Erase Surfaces
Colors:	Clear

Sanford Corporation is a member of The Art and Creative Materials Institute, Inc. This product is certified by the Institute to be labeled in accordance with the voluntary chronic hazard labeling standard ASTM D4236 and is labeled with the CL Cautionary Label Seal. Products bearing the CL Seal are certified to be properly labeled in a program of toxicological evaluation by a medical expert for any known health risks and with information on the safe and proper use of these materials. Conforms to ASTM D4236. This MSDS is applicable for the consumer use of the following product numbers: 81801, 81803

Section Two: Composition

Water, isopropyl alcohol (67-63-0), ethylene glycol monobutyl ether (111-76-2)

Section Three: Physical and Chemical Characteristics

	For isopropanol:
Boiling Point:	180^{O}F at 760 mm Hg
Vapor Pressure (mm Hg):	33 mm Hg at 68^{O}F
Specific Gravity:	0.78 at 77^{O}F
Solubility in Water:	Not available
Appearance and Odor:	Clear liquid; characteristic alcohol odor
Evaporation Rate:	7.7 (ethyl ether = 1)

Section Four: Fire and Explosion Hazard Data

Flash Point (Method Used):	105^{O}F (TCC) for mixture			
Flammability Limits (% by volume):	Lower:	2.5% for isopropanol	Upper:	Not available
Extinguishing Medium:	N/A			
Special Fire Fighting Procedures:	N/A			
Unusual Fire and Explosion Hazards:	N/A			

Section Five: Reactivity Data

Stability:	Stable
Conditions to Avoid:	Avoid extreme heat and flame.
Chemical Incompatibility:	None known
Hazardous Decomposition:	None known
Hazardous Polymerization:	Will not occur.

Section Six: Health Hazard Data

Chemicals Listed as Carcinogens or Potential Carcinogen:

IARC Monographs:	No
National Toxicology Program:	No
OSHA Regulated:	No

WARNING: FLAMMABLE. MAY BE HARMFUL BY INGESTION OR BY SKIN CONTACT. MAY BE HARMFUL IF SWALLOWED. EYE IRRITANT. CONTAINS: 2-BUTOXY ETHANOL/ACETATE, ISOPROPYL ALCOHOL. PRECAUTIONS: Avoid ingestion. Keep away from eyes. Do not store or use near heat or flame. KEEP OUT OF REACH OF CHILDREN. FIRST AID: If eye contact occurs, rinse with tap water for 5-10 minutes. If irritation persists, seek medical care. If skin contact occurs, wash with soap and water for 5 minutes. If swallowed, get prompt medical attention. For further health information, contact a poison control center or call 1-800-228-5635.

Section Seven: Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spill:	Wipe up with absorbent material.
Waste Disposal Method:	Dispose in accordance with Federal, State, and Local Regulations.
Precautions to Be Taken in Handling and Storage:	Use in a well-ventilated area.
Other Precautions:	Aim nozzle away from eyes.

Section Eight: Personal Protection and Exposure Control Measures

Eye Protection:	None under normal use conditions. Avoid eye contact.
Skin Protection:	None under normal use conditions. Avoid prolonged skin contact.
Respiratory Protection:	None under normal use conditions.
Ventilation:	Use in a well-ventilated area.
Protective Clothing:	None under normal use conditions.

HMIS Code	
Health	2
Flammability	2
Reactivity	0
Personal Protection	N/A

0 = Minimal / 4 = Severe Hazard

Sanford Corporation has been advised by council that the OSHA Hazard Communication Standard does not apply to the Sanford product described in this MSDS. The reason for the exemption is contained in 29 CFR 1910.1200 (b)(6)(ix), as amended July 1, 1994, per the Code of Federal Regulations. The information contained in this MSDS is forwarded to you for your information, but is not meant to imply that the product is covered by the Hazard Communication Standard, nor is the MSDS meant to comply with all the requirements of the Hazard Communication Standard.

MATERIAL SAFETY DATA SHEET

Flax Seed Meal

AHC Products, Inc.

PRODUCT NAME: (As used on label and list): Flax Seed Meal

This Material Safety Data Sheet is being provided to your company, for the purpose of providing current health and safety information to your management and employees who work with this product. Please read the data provided and then provide it to those individuals at your company who have the responsibility to insure compliance with both Federal and State Right to Know regulations, and to those employees that request information on this product.
Federal Regulations: Parts 29 and 42 Code of Federal Regulations
Date Prepared: 08/2009

SECTION I – PRODUCT IDENTIFICATION

MANUFACTURER: AHC Products, Inc.
AHC Products, Inc.
301 West Broadway
Winchester, Kentucky
859/737-3441

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENT (Specific Chemical Identity; Common Names):
Non-hazardous – feed grade ingredients

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

APPEARANCE AND ODOR: Free flowing brown/golden granules with a vegetable oil odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and protective clothing. Avoid any method which will create dust clouds.
EXTINGUISHING MEDIA: Use water fog or water spray.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Carbon Monoxide and Carbon Dioxide on combustion.
EXPOSION DATA: Powdered material may form an explosive dust-air mixture.
FLASH POINT: none

SECTION V – REACTIVITY DATA

STABILITY: Very Stable
INCOMPATIBILITY/MATERIALS TO AVOID: Strong Oxidizing Agents.
HAZARDOUS POLYMERIZATION: none

SECTION VI – HEALTH HAZARD DATA

HEALTH HAZARDS (ACUTE AND CHRONIC): Not considered hazardous for inhalation and ingestion at normal use.
EMERGENCY AND FIRST AID PROCEDURES:
EYES: May cause irritation. Flush with copious amounts of water for 15 minutes. Call a physician if irritation persists.
SKIN: If irritation occurs, wash with soap and water. Call a physician if irritation persists.

INGESTED: Ingestion of large quantities may cause gastro-intestinal discomfort including flatulence. In cases of persistent or severe symptoms seek medical attention.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

STORAGE: Store in multi-walled poly lined paper bags at 22°C/71°F. Powdered material may form a dust-air mixture. Minimize dust generation and accumulation during use.
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Collect and contain for salvage or disposal. Avoid procedures which cause a dust cloud to be formed.
WASTE DISPOSAL METHOD: In accordance with federal, state and local laws.

SECTION VIII – CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFIC TYPE): NIOSH/MSHA approved dust mask.
VENTILATION: recommend 10 air changes per hour for good ventilation.
PROTECTIVE GLOVES: rubber
EYE PROTECTION: Dust resistance safety goggles
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Eye baths and emergency shower.
WORK AND/OR HYGIENIC PRACTICES: Practice standard good hygiene.

Glycerin

MSDS # 314.00

ScholAR Chemistry

Section 1: Product and Company Identification

Glycerin

Synonyms/General Names: Glycerol
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Clear liquid, no odor.

Some individuals may be allergic to this substance. Combustible liquid.
Target organs: None known.

HMIS (0 to 4)

Health	0
Fire Hazard	1
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Glycerin (56-81-5), >99.5%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Combustible liquid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill with sand or absorbent material and place in sealed bag or container for disposal. Ventilate and wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Exposure guidelines: Glycerin: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	$HOCH_2CH(OH)CH_2OH$.	**Appearance**	Clear liquid.
Molecular weight	92.10.	**Odor**	No odor.
Specific Gravity	1.26 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water and alcohol.
Melting Point	18°C.	**Evaporation rate**	>1 *(Butyl acetate = 1).*
Boiling Point/Range	290°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	0.0025 mm/Hg @ 50°C.	**pH**	N/A.
Flash Point:	177°C (350.6°F).	**LEL**	0.9%.
Autoignition Temp.:	393°C (739°F).	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: some individuals may develop allergies to this material.
Glycerin: LD50 [oral, rat]; 12,600 mg/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; 500 mg/24 hr/mild
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (200-289-5).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

MSDS-GGHS12

Date Prepared:4/18/03

MATERIAL SAFETY DATA SHEET/COMPLIES WITH OSHA'S HAZARD COMMUNICATION STANDARD (29CFR 1910.1200)

SECTION I – PRODUCT IDENTIFICATION GOO GONE SPRAY GEL

CONTAINER SIZE: 12 fl oz. 55 gallon
STOCK NO.: GGHS12, GGHS12BM
SUPPLIER'S NAME: MAGIC AMERICAN PRODUCTS, INC.
ADDRESS: 23700 MERCANTILE ROAD; CLEVELAND, OH 44122

24 Hour Emergency Phone: CHEMTEL 1-800-255-3924
Information Phone: MAGIC AMERICAN PRODUCTS, INC.
M-F, 9-5 EST 1-800-321-6330

DOT SHIPPING INFORMATION
DOT SHIPPING NAME: Not regulated
DOT HAZARD CLASS: None
DOT LABEL: None
DOT PACKING GROUP: None

HAZARDS RATING INFORMATION			
	NFPA	NPCA(HMIS)	0-Minimal
Health	1	1	1-Slight
Flammability	2	2	2-Moderate
Reactivity	0	0	3-Serious
Personal Protection	N/A	C	4-Extreme
			C-Glasses, gloves, apron

SECTION II - INGREDIENTS

CHEMICAL NAME	CAS NO.	313/CHEMICAL	PEL	TWA/TLV	CARCINOGEN
Proprietary Mixture (Citrus and Mineral Oil Detergent Solution)	None	No ingredients are regulated	N/A	N/A	No

All ingredients used in this proprietary mixture are listed on the TSCA Inventory List and none is listed as carcinogenic by OSHA, IARC or NTP.

SECTION III – PHYSICAL DATA

Boiling Point: 310°F (154°C)
Vapor Pressure: ~0.1 mm Hg (25°C)
Solubility in Water: Complete
pH: None
Specific Gravity: 0.825 g/ml
Evaporation Rate: Negligible (ASTM D1901-85)
Appearance/Odor: Orange-Yellow Liquid with Citrus, Orange-like Fragrance
VOC Content: 68% VOC by CARB

SECTION IV – FIRE AND EXPLOSION DATA

Flash Point: 133°F (56°C) (Pensky-Marten Closed Cup)

Explosive Hazard: N/D

Extinguishing Media, Foam, dry chemical, carbon dioxide, and water spray or fog.

Special Fire Fighting Procedures: Use self-contained breathing apparatus for respiratory protection in enclosed areas when fighting a fire or when heating material becomes highly flammable.

Unusual Fire and Explosion Hazards: Not an oxidizer.

SECTION V – REACTIVITY DATA

Stability: Stable

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: None known.

Incompatibility: None known.

SECTION VI – STORAGE AND HANDLING

KEEP OUT OF THE REACH OF CHILDREN

Store in a cool, dry area away from heat or open flame.

Do not store at temperatures above 120°F.

SECTION VII – HEALTH EFFECTS AND FIRST AID

PRIMARY ROUTES OF ENTRY AND EFFECTS OF OVEREXPOSURE	FIRST AID PROCEDURES
EYES: According to the Federal Hazardous Substance Act testing protocol 16CFR 1500.42, this product was shown to be an eye irritant in laboratory tests. Therefore, this material is labeled an eye irritant.	EYES: Remove any contact lenses and flush both eyes with cool running water for at least 15 minutes. Seek medical attention if irritation persists.
SKIN: Irritant. According to the Federal Hazardous Substance Act testing protocol 16CFR 1500.41, this product was shown not to be a primary skin irritant in laboratory tests. Therefore, this product is not considered a skin irritant.	SKIN: Wash with soap and water. With extended periods of use, a skin emollient should be applied after use to prevent drying.
INHALATION: Not expected to be an inhalation hazard.	INHALATION: Remove person to fresh air.
INGESTION: According to the Federal Hazardous Substance Act testing protocol 16CFR 1500.3(c)(2)(i), this product was shown to be non-toxic by the oral route of exposure. This material is not considered an ingestion hazard.	INGESTION: Rinse mouth and then drink a large glass of water and seek immediate medical attention.
LONG TERM EFFECTS: No long term effects expected.	

SECTION VIII – SPECIAL PROTECTION DATA

RESPIRATORY PROTECTION: Not needed.

VENTILATION: Not needed.

PROTECTIVE GLOVES: Chemically resistant gloves (neoprene) are recommended for prolonged use.

EYE PROTECTION: Recommended if splashing during transfer is possible.

SECTION IX – SPILL OR LEAK PRECAUTIONS

STEPS TO BE TAKEN IN CASE OF SPILLAGE OR LEAKAGE: Ventilate area. Spilled material can be picked up with sorbant material. Use caution where surfaces may become slippery from spilled material.

WASTE DISPOSAL METHOD: Sweep up and place in empty container and close. Dispose of according to local, state and federal regulations.

WASTE DISPOSAL CAUTION: Hazardous substances cleaned with this product may create hazardous waste that must be properly characterized and disposed of in accordance with RCRA, state and local regulations.

N/A = NOT APPLICABLE N/E = NOT ESTABLISHED N/D = NOT DETERMINED < = LESS THAN > = MORE THAN

Spartan Chemical Company, Inc.
Material Safety Data Sheet

SECTION I: PRODUCT INFORMATION

Product Name or Number (as it appears on label):
GREEN SOLUTIONS ALL PURPOSE CLEANER
Product Number: 3501
2-Liter Cartridge 101: 3511

Product Division:
Janitorial

Spartan Chemical Company , Inc.
1110 Spartan Drive
Maumee OH 43537

Product/Technical Information: **1-(800)-537-8990**
Medical Emergency: **1-(888)-314-6171 (24 hours)**
Chemical Leak/Spil Emergency: **CHEMTREC 1-(800) 424-9300 (24 hours)**

Shipping Description: Cleaning compounds, liquid, n.o.s.

NFPA Ratings:	HMIS Ratings:
Health: 2 - Moderate	**Health:** 2 - Moderate
Fire: 0 - Minimal	**Fire:** 0 - Minimal
Reactivity: 0 - Minimal	**Reactivity:** 0 - Minimal
	Pers. Prot. Equip.: See Section VIII

SECTION II: HAZARDOUS INGREDIENTS

(Listed when present at 1% or greater, carcinogens at 0.1% or greater) All component chemicals are listed or exempted from listing on the "TSCA Inventory" of chemical substances maintained by the U.S. Environmental Protection Agency.

Chemical Name(s)	%Wt	CAS Registry No.	Table Z-1-A TWA mg/m³	Table Z-1-A STEL mg/m³	Table Z-1-A CEILING mg/m³	NTP, IARC or OSHA Carcinogen
Alkyl polyglycoside	1-5	132778-08-6	Not Established	Not Established	Not Established	No
Sodium carbonate	1-5	497-19-8	Not Established	Not Established	Not Established	No
Polyethylene glycol propoxylated	1-5	9003-11-6	Not Established	Not Established	Not Established	No
Citric Acid	1-5	77-92-9	Not Established	Not Established	Not Established	No
Alcohol ethoxylate	1-5	68439-46-3	Not Established	Not Established	Not Established	No

SECTION III: PHYSICAL DATA

Boiling Point:	212 °F	Vapor Pressure:	Unknown
Vapor Density (AIR = 1):	Unknown	Solubility in Water:	Complete
pH:	7.0-8.0	Specific Gravity (H_2O=1):	1.01 @ 75 F
Evaporation Rate (but.ace.=1):	<1	Percent Solid by Weight:	5-10%
Physical State:	Liquid		
Appearance & Odor:	Clear liquid, mild odor.		

SECTION IV: FIRE & EXPLOSIVE HAZARD DATA

Flash Point:	>212 °F	Method Used:	Estimate
Flammable Limits:	Not Established	Flame Extension:	N/A
Extinguishing Media:	Product does not support combustion. Use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures:	Wear NIOSH approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray.		
Unusual Fire & Explosive Hazards:	Combustion products are toxic.		

SECTION V: HEALTH HAZARD DATA

Threshold Limit Value:	Not established	Primary Routes of Entry:	Inhalation, Skin Contact, Eyes; Oral

Effects of Overexposure-Conditions to Avoid:	**Causes eye irritation:** Symptoms may include pain, redness, swelling and tearing **Causes skin irritation:** Symptoms may include pain, redness and swelling. **May be harmful if swallowed:** Symptoms may include nausea, vomiting, pain and diarrhea. **Inhalation of product mist may cause respiratory irritation:** Symptoms may include coughing and difficulty breathing. **Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing product mist.**
Conditions Aggravated by Use:	Use of this product may aggravate preexisting eye; skin and respiratory disorders such as asthma and dermatitis.
Emergency & First Aid Procedures:	
Eyes:	Flush eyes with water for at least 15 minutes. Remove contact lenses. Get medical attention.
Skin:	Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists. Wash contaminated clothing before reuse.
Ingestion:	Do not induce vomiting unless advised by physician or poison control center. Drink one or two glasses of water to dilute product. Get medical attention. Do not give anything by mouth to an unconscious person.
Inhalation:	Move person to fresh air. Get medial attention if irritation persists.

SECTION VI: REACTIVITY DATA

Stability:	Stable	Incompatible Materials:	Strong oxidizers
Hazardous Decomposition Products:	Carbon monoxide, Carbon dioxide	Hazardous Polymerization:	Will Not Occur

SECTION VII: SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:	Small spills of one gallon or less may be flushed with plenty of water to sanitary sewer system (If permitted by local sewer regulations). Dike and contain large spills with inert material and transfer liquid to containers for recovery or disposal.
Waste Disposal Method:	Same as above.

SECTION VIII: SPECIAL PROTECTION INFORMATION

Respiratory Protection:	Not normally required when good general ventilation is provided. However if respiratory irritation occurs; the use of a NIOSH approved respirator suitable for the use-conditions and chemicals in Section II should be considered.
Ventilation:	Provide good general ventilation. Local exhaust ventilation may be necessary for some operations.
Protective Gloves(Specify Type):	Impervious rubber or other waterproof gloves are recommended.
Eye Protection(Specify Type):	Splash goggles are recommended to prevent eye contact.
Other Protective Equipment:	See 29 CFR 1910.132-138 for further guidance.

SECTION IX: SPECIAL PRECAUTIONS

Precautions; Handling & Storing:	Wash thoroughly with soap and water after handling.
Other Precautions:	Keep out of reach of children.

GREEN SOLUTIONS ALL PURPOSE CLEANER
Ref: 29 CFR 1910.1200 (OSHA)

Name: Ronald T. Cook
Effective Date: 09/22/2008
Changes: Update Section V

Title: Manager, Regulatory Affairs
Supercedes: 06/30/2005

Spartan Chemical Company, Inc.
Material Safety Data Sheet

SECTION I: PRODUCT INFORMATION

Product Name or Number (as it appears on label):
GREEN SOLUTIONS NEUTRAL DISINFECTANT CLEANER
Product Number: 3502
2-Liter Cartridge 103: 3513

Product Division:
Janitorial

Spartan Chemical Company , Inc.
1110 Spartan Drive
Maumee OH 43537

Product/Technical Information: **1-(800)-537-8990**
Medical Emergency: **1-(888)-314-6171 (24 hours)**
Chemical Leak/Spil Emergency: **CHEMTREC 1-(800) 424-9300 (24 hours)**

Shipping Description: Disinfectants, liquid, n.o.s.

NFPA Ratings:	HMIS Ratings:
Health: 3 - Serious	**Health:** 3 - Serious
Fire: 0 - Minimal	**Fire:** 0 - Minimal
Reactivity: 0 - Minimal	**Reactivity:** 0 - Minimal
	Pers. Prot. Equip.: See Section VIII

SECTION II: HAZARDOUS INGREDIENTS

(Listed when present at 1% or greater, carcinogens at 0.1% or greater) All component chemicals are listed or exempted from listing on the "TSCA Inventory" of chemical substances maintained by the U.S. Environmental Protection Agency.

Chemical Name(s)	%Wt	CAS Registry No.	Table Z-1-A TWA mg/m^3	Table Z-1-A STEL mg/m^3	Table Z-1-A CEILING mg/m^3	NTP, IARC or OSHA Carcinogen
Dialkyl dimethyl ammonium chloride	1-5	68424-95-3	Not Established	Not Established	Not Established	No
Alcohol ethoxylate	1-5	68439-46-3	Not Established	Not Established	Not Established	No
Alkyl dimethyl benzyl ammonium chloride	1-5	68424-85-1	Not Established	Not Established	Not Established	No
Ethanol	1-5	64-17-5	1900	Not Established	Not Established	No
Tetrasodium ethylene diaminetetraacetate	1-5	64-02-8	Not Established	Not Established	Not Established	No

SECTION III: PHYSICAL DATA

Boiling Point:	212 °F	Vapor Pressure:	Not determined
Vapor Density (AIR = 1):	Not determined	Solubility in Water:	Complete
pH:	6-7	Specific Gravity (H_2O=1):	1.0
Evaporation Rate (but.ace.=1):	<1	Percent Solid by Weight:	5-10
Physical State:	Liquid		
Appearance & Odor:	Clear to slightly yellow liquid, low odor		

SECTION IV: FIRE & EXPLOSIVE HAZARD DATA

Flash Point:	> 212°F	Method Used:	ASTM-D56
Flammable Limits:	Not Established	Flame Extension:	N/A
Extinguishing Media:	Product does not support combustion. Use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures:	Wear NIOSH approved self-contained breathing apparatus and protective clothing. Cool fire-exposed containers with water spray.		
Unusual Fire & Explosive Hazards:	Combustion products are toxic.		

SECTION V: HEALTH HAZARD DATA

Threshold Limit Value:	Not established	Primary Routes of Entry:	Inhalation, Skin Contact, Eyes

Effects of Overexposure- Conditions to Avoid:	**CORROSIVE.** **CAUSES IRREVERSIBLE EYE DAMAGE AND SKIN BURNS:** Symptoms may include pain, redness, swelling and tissue damage. May be fatal if absorbed through the skin. **HARMFUL IF SWALLOWED.** Symptoms may include nausea, vomiting, pain and diarrhea. **INHALATION OF SPRAY MIST MAY CAUSE RESPIRATORY IRRITATION.** Breathing spray mist may cause coughing and difficulty breathing. **Do not get in eyes, skin or clothing. Do not taste or swallow. Avoid inhalation of spray mist. Wash thoroughly with soap and water after handling .**
Conditions Aggravated by Use:	Use of this product may aggravate preexisting skin; eye and respiratory disorders including asthma and dermatitis.
Emergency & First Aid Procedures:	
Eyes:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses; If present ; after the first 5 minutes; then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes . Call a poison control center or doctor for treatment advice. Wash contaminated clothing before reuse.
Ingestion:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Inhalation:	In case of respiratory irritation; move person to fresh air. If person is not breathing; call 911 or an ambulance then give artificial respiration; preferably by mouth-to-mouth; if possible. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

SECTION VI: REACTIVITY DATA

Stability:	Stable	Incompatible Materials:	Strong oxidizers
Hazardous Decomposition Products:	CO, CO_2	Hazardous Polymerization:	Will Not Occur

SECTION VII: SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:	Small spills of one gallon or less may be flushed with plenty of water to sanitary sewer system (If permitted by local sewer regulations). Dike and contain large spills with inert material and transfer liquid to containers for recovery or disposal.
Waste Disposal Method:	Same as above. Container disposal: Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or if allowed by state and local authorities, burn. If burned, stay out of smoke.

SECTION VIII: SPECIAL PROTECTION INFORMATION

Respiratory Protection:	Not normally required when good general ventilation is provided. However, if respiratory irritation occurs, use of a NIOSH approved respirator suitable for the use-conditions and chemicals in Section II should be considered.
Ventilation:	Provide good general ventilation. Local exhaust ventilation may be necessary for some operations.
Protective Gloves(Specify Type):	Rubber or other water-proof gloves are recommended.
Eye Protection(Specify Type):	Splash goggles are recommended to prevent eye contact.
Other Protective Equipment:	Eye wash stations and washing facilities should be readily accessible in areas where undiluted product is handled.. See 29 CFR 1910.132-138 for further guidance.

SECTION IX: SPECIAL PRECAUTIONS

Precautions; Handling & Storing:	Keep from freezing.
Other Precautions:	Keep out of reach of children.

GREEN SOLUTIONS NEUTRAL DISINFECTANT CLEANER
Ref: 29 CFR 1910.1200 (OSHA)

Name: Ronald T. Cook
Effective Date: 03/25/2008
Changes: Formula Revision

Title: Manager, Regulatory Affairs
Supercedes: 09/23/2005

This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained herein. Actual conditions of use and handling are beyond sellers control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State and Local laws and regulations.

Iron Filings

MSDS # 381.00

ScholAR Chemistry

Section 1: Product and Company Identification

Iron Filings

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Dark black particles; no odor.

This material is not considered hazardous.
Target organs: None known.

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Iron Filings (7439-89-6), 100%

Section 4: First Aid Measures

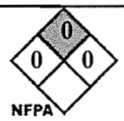
Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an dust cartridge. Exposure guidelines: Iron: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	Fe.	**Appearance**	Dark black particles.
Molecular weight	55.85.	**Odor**	No odor.
Specific Gravity	7.86 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in sulfuric or muriatic acid.
Melting Point	1535°C.	**Evaporation rate**	N/A . *(Butyl acetate = 1).*
Boiling Point/Range	3000°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers, organic agents, mineral acids, water.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Iron: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-096-4).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/05/2009 Reviewed on 08/05/2009

1 Identification of substance:

Product details:

Product name: Iron granules

Stock number: 39708

Manufacturer/Supplier:
Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Emergency Phone: (978) 521-6300
CHEMTREC: (800) 424-9300
Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency information:
During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:
Description: (CAS#)
Iron (CAS# 7439-89-6), 100%
Identification number(s):
EINECS Number: 231-096-4

3 Hazards identification

Hazard description:

Xi Irritant

Information pertaining to particular dangers for man and environment
R 36/37 Irritating to eyes and respiratory system.
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

HEALTH	0
FIRE	0
REACTIVITY	0

Health (acute effects) = 0
Flammability = 0
Reactivity = 0

GHS label elements

Warning

3.3/2A - Causes serious eye irritation.
3.8/3 - May cause respiratory irritation.
Prevention:
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Response:
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/physician if you feel unwell.
If eye irritation persists: Get medical advice/attention.
Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

(Contd. on page 2)

(Contd. of page 1)

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

4 First aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek immediate medical advice.
Information for doctor
The following symptoms may occur:
Nausea
Cramp
Gastric or intestinal disorders.

5 Fire fighting measures

Suitable extinguishing agents Extinguishing powder. Do not use water.
For safety reasons unsuitable extinguishing agents
Water
Carbon dioxide
Halogenated extinguisher
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Measures for environmental protection:
Do not allow material to be released to the environment without proper governmental permits.
Measures for cleaning/collecting: Ensure adequate ventilation.
Additional information:
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Information for safe handling:
Handle under dry argon.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: No special measures required.

Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Do not store together with oxidizing and acidic materials.
Store away from halogens.
Store away from air.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
Keep container tightly sealed.

(Contd. on page 3)

(Contd. of page 2)

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.
Additional information: No data

Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands: Impervious gloves
Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Granules
Color:	Grey
Odor:	Odorless
Change in condition	
Melting point/Melting range:	1536°C (2797°F)
Boiling point/Boiling range:	3000°C (5432°F)
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Flammability (solid, gaseous)	Fine powder: highly flammable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 1787°C (3249°F):	1.33 hPa (1 mm Hg)
Density at 20°C (68°F):	7.87 g/cm³
Solubility in / Miscibility with	
Water:	Insoluble

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Materials to be avoided:
Acids
Water/moisture
Oxidizing agents
Air
Halogens
Dangerous reactions Reacts with strong oxidizing agents
Dangerous products of decomposition: Metal oxide fume

(Contd. on page 4)

(Contd. of page 3)

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	20000 mg/kg (guinea pig)
		30000 mg/kg (rat)
	LDLo	20 mg/kg (rabbit)

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Other information (about experimental toxicology):
Tumorigenic effects have been observed on tests with laboratory animals.
Subacute to chronic toxicity:
Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. May cause damage to the kidneys. Irritating to the respiratory tract, they may cause pulmonary fibrosis if dusts are inhaled.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:
Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:
Hazard class: None

Land transport ADR/RID (cross-border)
ADR/RID class: None

Maritime transport IMDG:
IMDG Class: None
Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

Product related hazard informations:

Hazard symbols:
Xi Irritant

Risk phrases:
36/37 Irritating to eyes and respiratory system.

(Contd. on page 5)

(Contd. of page 4)

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

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

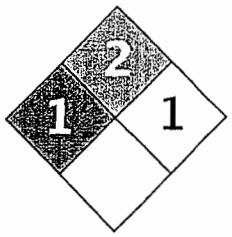
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.
Contact: Zachariah Holt

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

Alfa Aesar A Johnson Matthey Company
Alfa Aesar A Johnson Matthey Company

ScienceLab.com
Chemicals & Laboratory Equipment



Health	1
Fire	2
Reactivity	1
Personal Protection	E

Material Safety Data Sheet
Iron Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Iron Metal

Catalog Codes: SLI2047, SLI1996

CAS#: 7439-89-6

RTECS: NO4565500

TSCA: TSCA 8(b) inventory: Iron Metal

CI#: Not applicable.

Synonym:

Chemical Name: Iron

Chemical Formula: Fe

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Iron Metal, powder	7439-89-6	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to liver, cardiovascular system, upper respiratory tract, pancreas.
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Chlorine Trifluoride reacts with iron with incandescence.
Powdered iron reacts with fluorine below redness with incandescence.
Reduced iron decomposes with nitrogen dioxide @ ordinary temperature with incandescence.
Reacting mass formed by mixture of phosphorus and iron can become incandescent when heated. This material is flammable in powder form only.

Special Remarks on Explosion Hazards: Material in powdered form can explode when exposed to heat or flame

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water

on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid metallic powder.)

Odor: Odorless.

Taste: Tasteless.

Molecular Weight: 55.85 g/mole

Color: Black to Grey.

pH (1% soln/water): Not applicable.

Boiling Point: 3000°C (5432°F)

Melting Point: 1535°C (2795°F)

Critical Temperature: Not available.

Specific Gravity: Density: 7.86 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, incompatible materials, water/moisture, air, dust generation.

Incompatibility with various substances:
Reactive with oxidizing agents, acids.
Slightly reactive to reactive with moisture.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity:
Hot iron(wire) burns in Chlorine gas.
Violent decompositon of hydrogen peroxide (53% by weight or greater) may be caused by contact with iron.
Readily oxidizes in moist air forming rust.
Reactive with halogens.
Incompatible with acetaldehyde, ammonium peroxodisulfate, chloroformamidinum, chloric acid, ammonium nitrate, dinitorgen tetroxide, nitryl fluoride, polystyrene, sodium acetylide, potassium dichromate, peroxyformic acid, sulfuric acid, sodium carbide.
Readily attacked by dilute mineral acids and or attacked or dissolved by organic acids.
Not appreciably attacked by cold sulfuric acid, or nitric acid, but is attacked by hot acids.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 30000 mg/kg [Rat].

Chronic Effects on Humans: May cause damage to the following organs: liver, cardiovascular system, upper respiratory tract, pancreas.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects:
Skin:
Iron metal filings or dust: May cause skin irritation by mechanical action.
Iron metal wire: Not likely to cause skin irritation
Eyes:
Iron metal filings or dust: Can irritate eyes by mechanical action.
Iron metal wire: No hazard. Will not cause eye irritation.
Inhalation:

Iron dust: Can irritate the respiratory tract by mechanical action.
Iron metal wire or filings: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count.
Ingestion:
Iron metal wire: Not an ingestion hazard:
Iron metal filings or dust: The amount of ingested iron which constitutes a toxic dose is not well defined. Proposed toxic doses of elemental iron are 20 mg/kg for gastrointestinal irritation to greater than 60 mg/kg for systemic toxicity. Gastrointestinal effects are the first signs to appear, with hemorrhagic vomiting and diarrhea, hematochezia, abdominal pain, lethargy, metabolic acidosis, coagulaopathy, shock, coma and convulsions developing from 0 to 6 hours after ingestion. Leukocytosis may also occur. An asymptomatic phase may ensue at 6 to 12 hours postingestion, followed by hypoglycemia or hyperglycemia, hepatic and renal failure, severe acidosis, cyanosis, fever, CNS depression (lethargy, restlessness and/or confusion seizures), hypotension, and cardiovascular collapse/cardiac failure in 12 to 48 hours. Hepatic cirrhosis, gastrointestinal scarring and/or strictures may arise in 2 to 6 weeks. It may also cause an anaphylactoid reaction. Non-cardiogenic pulmonary edema also develop in severe cases of iron intoxication.
Chronic Potential Health Effects:
Inhalation: Chronic inhalation of iron dust can lead to accumulation in the lungs and a characteristic stippled appearance on X-rays. This condition, called SIDEROSIS, is considered benign in that it does not interfere with lung function and does not predispose to other disease. Chronic inhalation of iron dust may also cause fibrosis in the lungs.
Ingestion: Clinical signs of iron overload appear when the total body iron is 5 to 10 times higher than normal. Neurobehavioral defects including depression, decreased activity, habituation, reflex startle, and conditioned avoidance response performance may occur. However, similiar effects were also seen in iron defficiency. It is therefore likely that these behavioral effects are secondary to general toxicity. High serum iron levels may be associated with an increased risk of fatal acute myocardial infarction (MI).
Skin: Prolonged or repeated contact may cause hypersensivity.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Metal powder, flammable, n.o.s. (Iron metal powder) UNNA: 3089 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California Director's List of Hazardous Substances: Iron Metal
TSCA 8(b) inventory: Iron Metal

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-4: Flammable solid.

DSCL (EEC):
R11- Highly flammable.
S16- Keep away from sources of ignition - No smoking.
S22- Do not breathe dust.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:52 PM

Last Updated: 11/06/2008 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the

Section 15: Other Regulatory Information

Federal and State Regulations:
California Director's List of Hazardous Substances: Iron Metal
TSCA 8(b) inventory: Iron Metal

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-4: Flammable solid.

DSCL (EEC):
R11- Highly flammable.
S16- Keep away from sources of ignition - No smoking.
S22- Do not breathe dust.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:52 PM

Last Updated: 11/06/2008 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the

information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Date Prepared: 1/15/2011

SECTION 1 – Product Identification

PRODUCT NAME: J-B Weld, J-B Professional (Hardener)
PRODUCT CODE: 8265, 8265S, 8265SF, 8280, 7265S
SYNONYM/CROSS REFERENCE: Epoxy Paste Hardener

COMPANY:

J-B Weld Company

P.O. Box 483
1130 Como Street
Sulphur Springs, TX 75482

Tel: (903) 885-7696
Fax: (903) 885-5911

SECTION 2 – Hazard Identification

Potential Health Effects

EYE: May cause moderate eye irritation.

SKIN: Has caused allergic skin reactions in humans. A single exposure not likely to cause skin irritation. Prolonged and repeated contact may cause skin irritation with local redness.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

INHALATION: Vapors are unlikely due to physical properties.

CHRONIC (CANCER) INFORMATION: N/A

TERATOLOGY (BIRTH DEFECT) INFORMATION: N/A

REPRODUCTION INFORMATION: N/A

SECTION 3 – Composition, Information or Ingredients

Component/Exposure Limits	CAS#	% by Wt.
Polyamide Oral LD(50) Rat: >500 mg/kg Inhalation LC(50) (1hr) Rat: >20 mg/l Skin LD(50) Rabbit: >2000 mg/kg	**135108-88-2**	**15% to 40%**
Polyamide Resin Eye irritation Rabbit: 75.7 (scale 0-110) Oral LD(50) Rat : >8.0 g/kg Skin Irritation Rabbit: 3.0 (Scale 0-8)	**68410-23-1**	**15% to 40%**
Triethylenediamine ORAL: LD50 3200 mg/kg (Rat) INHALATION: LC50 (1 h) >10.1 mg/l SKIN: LD50 >2,000 mg/kg (Rabbit)	**280-57-9**	**1% to 5%**
2,4,6-TRIS(DIMETHYLAMINO)METHYL PHENOL SKIN IRRITATION: 8 (scale 0-8) (rabbit) ORAL LD(50): 1653 mg/kg (rat) INHALATION LC(50): >0.5 mg/L (rat) EYE IRRITATION: 110 (scale 0-110) (rabbit) DOT CORROSIVITY: neg. (rabbit)	**90-72-2**	**1% to 5%**

SECTION 4 – First Aid Measures

EYES:
Flush eyes thoroughly with water for several minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Wash skin with plenty of soap and water.

INGESTION: No emergency medical treatment necessary.

INHALATION: N/A

NOTE TO PHYSICIANS: Consider additional thorough skin wash with mild, nonabrasive soap and plenty of warm water for at least fifteen minutes.

SECTION 5 – Fire-Fighting Measures

FLAMMABLE PROPERTIES:

FLASH POINT: > 140F Method: N/A
FLAMMABLE LIMITS:
Lower flammable limit: N/A
Upper flammable limit: N/A
AUTOIGNITION TEMPERATURE: N/A

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, oxides of nitrogen and sulfur.

EXTINGUISHING MEDIA:
FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, OTHER

FIREFIGHTING INSTRUCTIONS:

Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool. Fire Fighters and others who may be exposed to the products of combustion should be equipped with NIOSH approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

SECTION 6 – Accidental Release Measures

SPILLS:
Dispose of in normal manner in accordance to all applicable state, federal, and local laws. Not a hazardous waste.

SECTION 7 – Handling and Storage

HANDLING:
No special precautions needed.
Personal hygiene- Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Professionally launder contaminated clothing before use.
Empty container precautions- Do not reuse empty containers for food, clothing, or products for human or animal consumption, or where skin contact can occur.

STORAGE:
Temperature - Less than 90 F.
Conditions - Store in cool, dry, well-ventilated area.

SECTION 8 – Exposure Controls and Personal Protection

ENGINEERING CONTROLS:
Local exhaust: Use to keep exposures below recommendations.
Use if material is heated above 100 F.

RESPIRATORY PROTECTION:
None required in a well-ventilated area.

SKIN PROTECTION:
Appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for the specific operation.

EYE PROTECTION:
Safety glasses or goggles.

SECTION 9 – Physical and Chemical Properties

BOILING POINT: N/A
MELTING POINT: N/A
VAPOR PRESSURE: N/A
VAPOR DENSITY: N/A
SOLUBILITY IN WATER: Insoluble in water
SPECIFIC GRAVITY: 1.9546
pH: N/A
VOLATILE ORGANIC COMPOUNDS: <0.1%
ODOR: Ammonia, Fishy
APPEARANCE: THICK PASTE

SECTION 10 – Stability and Reactivity

CHEMICAL STABILITY (CONDITIONS TO AVOID): This product is stable.
INCOMPATIBILITY: None.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, aldehydes, acids, oxides of sulfur and nitrogen
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 – Toxicological Information

EYE: N/A
SKIN: N/A
INGESTION: N/A
INHALATION: N/A
SUBCHRONIC: N/A
CHRONIC/CARCINOGENICITY: N/A
TERATOLOGY: N/A
REPRODUCTION: N/A
MUTAGENICITY: N/A

SECTION 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION: N/A
CHEMICAL FATE INFORMATION: N/A

SECTION 13 – Disposal Considerations

Incinerate in furnace or bury in landfill in accordance with all applicable regulations.
Not classified as a hazardous waste.

SECTION 14 – Transport Information

Not DOT regulated.

SECTION 15 – Regulatory Information

U.S. FEDERAL REGULATIONS: TSCA: All ingredients are TSCA listed.
OSHA: Not OSHA regulated.
CERCLA: SARA HAZARD CATEGORY: Not regulated.
SECTION 313: Not regulated.
INTERNATIONAL REGULATIONS:
CANADIAN WHMIS: DB2 skin sensitizer.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): N/A
EINECS: EINECS listed.
STATE REGULATIONS: CALIFORNIA PROPOSITION 65
This product contains the following chemicals known to the state of California to cause cancer or reproductive toxicity. None

The following ingredients are present in this material and are subject to reporting in accordance to the Pennsylvania, New Jersey, and/or Massachusetts Right-to-Know (RTK) laws:
Barites (CAS 7727-43-7)
Calcium Carbonate (CAS 1317-65-3)

SECTION 16 – Other Information

Hazard Ratings
NFPA Ratings: Health: 1 Fire: 0 Physical Data: 0 PPE: B

MSDS Last Revised: 01/15/2011 Created by: I. David Crossan

USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects on an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damage incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation of warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

PREPARED BY:

J-B Weld Company

P.O. Box 483
1130 Como Street
Sulphur Springs, TX 75482
Tel: (903) 885-7696
Fax: (903) 885-5911

MATERIAL SAFETY DATA SHEET

Date Prepared: 1/15/2011

SECTION 1 – Product Identification

PRODUCT NAME:	**J-B Weld, J-B Professional (Resin)**
PRODUCT CODE:	**8265, 8265S, 8265SF, 8280, 7265S**
SYNONYM/CROSS REFERENCE:	**Epoxy Paste Resin**
COMPANY:	**J-B Weld Company**

P.O. Box 483
1130 Como Street
Sulphur Springs, TX 75482

Tel: (903) 885-7696
Fax: (903) 885-5911

SECTION 2 – Hazard Identification

Potential Health Effects

EYE: May cause moderate eye irritation.

SKIN: Has caused allergic skin reactions in humans. A single exposure not likely to cause skin irritation. Prolonged and repeated contact may cause skin irritation with local redness.

INGESTION: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

INHALATION: Vapors are unlikely due to physical properties.

CHRONIC (CANCER) INFORMATION: N/A

TERATOLOGY (BIRTH DEFECT) INFORMATION: N/A

REPRODUCTION INFORMATION: N/A

SECTION 3 – Composition, Information or Ingredients

Component/Exposure Limits	CAS#	% by Wt.
Diglycidyl Ether of Bisphenol A INGESTION LD(50): >5000 mg/kg (rat) SKIN ABSORPTION: 20000 mg/kg (rabbit)	**25068-38-6**	**15% to 40%**
Diglycidyl ether of bisphenol F Oral LD50 rats >2000 mg/kg	**28064-14-4**	**5% to 10%**

SECTION 4 – First Aid Measures

EYES:
Flush eyes thoroughly with water for several minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Wash skin with plenty of soap and water.

INGESTION: No emergency medical treatment necessary.

INHALATION: N/A

NOTE TO PHYSICIANS: Consider additional thorough skin wash with mild, nonabrasive soap and plenty of warm water for at least fifteen minutes.

SECTION 5 – Fire-Fighting Measures

FLAMMABLE PROPERTIES:

FLASH POINT: > 140F Method: N/A
FLAMMABLE LIMITS:
Lower flammable limit: N/A
Upper flammable limit: N/A
AUTOIGNITION TEMPERATURE: N/A

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, oxides of nitrogen and sulfur.

EXTINGUISHING MEDIA:
FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG, OTHER

FIREFIGHTING INSTRUCTIONS:

Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool. Fire Fighters and others who may be exposed to the products of combustion should be equipped with NIOSH approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

SECTION 6 – Accidental Release Measures

SPILLS:
Dispose of in normal manner in accordance to all applicable state, federal, and local laws. Not a hazardous waste.

SECTION 7 – Handling and Storage

HANDLING:
No special precautions needed.
Personal hygiene- Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Professionally launder contaminated clothing before use.
Empty container precautions- Do not reuse empty containers for food, clothing, or products for human or animal consumption, or where skin contact can occur.

STORAGE:
Temperature - Less than 90 F.
Conditions - Store in cool, dry, well-ventilated area.

SECTION 8 – Exposure Controls and Personal Protection

ENGINEERING CONTROLS:
Local exhaust: Use to keep exposures below recommendations.
Use if material is heated above 100 F.

RESPIRATORY PROTECTION:
None required in a well-ventilated area.

SKIN PROTECTION:
Appropriate impervious gloves. Because a variety of protective gloves exist, consult glove manufacturer to determine the proper type for the specific operation.

EYE PROTECTION:
Safety glasses or goggles.

SECTION 9 – Physical and Chemical Properties

BOILING POINT: 392F200C
MELTING POINT: N/A
VAPOR PRESSURE: N/A
VAPOR DENSITY: N/A
SOLUBILITY IN WATER: Insoluble in water
SPECIFIC GRAVITY: 1.9313
pH: N/A
VOLATILE ORGANIC COMPOUNDS: <0.1%
ODOR: Sweet, Acrid
APPEARANCE: THICK PASTE

SECTION 10 – Stability and Reactivity

CHEMICAL STABILITY (CONDITIONS TO AVOID): This product is stable.
INCOMPATIBILITY: None.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, aldehydes, acids, oxides of sulfur and nitrogen
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 – Toxicological Information

EYE: N/A
SKIN: N/A
INGESTION: N/A
INHALATION: N/A
SUBCHRONIC: N/A
CHRONIC/CARCINOGENICITY: N/A
TERATOLOGY: N/A
REPRODUCTION: N/A
MUTAGENICITY: N/A

SECTION 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION: N/A
CHEMICAL FATE INFORMATION: N/A

SECTION 13 – Disposal Considerations

Incinerate in furnace or bury in landfill in accordance with all applicable regulations.
Not classified as a hazardous waste.

SECTION 14 – Transport Information

Not DOT regulated.

SECTION 15 – Regulatory Information

U.S. FEDERAL REGULATIONS: TSCA: All ingredients are TSCA listed.
OSHA: Not OSHA regulated.
CERCLA: SARA HAZARD CATEGORY: Not regulated.
SECTION 313: Not regulated.
INTERNATIONAL REGULATIONS:
CANADIAN WHMIS: DB2 skin sensitizer.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): N/A
EINECS: EINECS listed.
STATE REGULATIONS: CALIFORNIA PROPOSITION 65
This product contains the following chemicals known to the state of California to cause cancer or reproductive toxicity. None

The following ingredients are present in this material and are subject to reporting in accordance to the Pennsylvania, New Jersey, and/or Massachusetts Right-to-Know (RTK) laws:
Iron Powder (CAS 7439-89-6)
Calcium Carbonate (CAS 1317-65-3)

SECTION 16 – Other Information

Hazard Ratings
NFPA Ratings: Health: 1 Fire: 0 Physical Data: 0 PPE: B

MSDS Last Revised: 01/15/2011 Created by: I. David Crossan

USERS RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects on an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damage incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation of warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

PREPARED BY:

J-B Weld Company

P.O. Box 483
1130 Como Street
Sulphur Springs, TX 75482
Tel: (903) 885-7696
Fax: (903) 885-5911

FLINN SCIENTIFIC, INC.
Material Safety Data Sheet (MSDS)

MSDS #: 432.00
Revision Date: October 28, 2010

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Lead

Flinn Scientific, Inc. P.O. Box 219 Batavia, IL 60510 (800) 452-1261
CHEMTREC Emergency Phone Number: (800) 424-9300

SECTION 2 — COMPOSITION, INFORMATION ON INGREDIENTS

Lead

CAS#: 7439-92-1

SECTION 3 — HAZARDS IDENTIFICATION

Heavy, ductile, gray solid. Forms: foil, sheets, shot, strips, and wire. Odorless.
Lead and lead compounds are possible carcinogens (IARC-2B).
Lead as a powder or dust is toxic by ingestion or inhalation. Avoid ingestion and inhalation.
Emits highly toxic fumes of Pb when heated. Chronic exposure to inorganic lead via inhalation or ingestion can result in accumulation in and damage to the soft tissues and bones.

FLINN AT-A-GLANCE
Health-2
Flammability-0
Reactivity-0
Exposure-0
Storage-0
0 is low hazard, 3 is high hazard

SECTION 4 — FIRST AID MEASURES

Call a physician and seek medical attention for further treatment, observation, and support after first aid.
Inhalation: Remove to fresh air at once. If breathing has stopped, give artificial respiration immediately.
Eye: Immediately flush with fresh water for at least 15 minutes.
External: Wash continuously with fresh water for at least 15 minutes.
Internal: Rinse out mouth, give 1 to 2 cups of water or milk, and induce vomiting. After vomiting, give mixture of 2 Tbs. of activated charcoal mixed with one cup of water. Call a physician or poison control at once.

SECTION 5 — FIRE FIGHTING MEASURES

Finely divided lead dust is flammable.
Emits highly toxic fumes of Pb when heated.
Fire Fighting Instructions: Use a triclass, dry chemical fire extinguisher. Firefighters should wear PPE and SCBA with full facepiece operated in positive pressure mode.

NFPA CODE
None established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Restrict unprotected personnel from the area. 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 #1. Store with metals and metal hydrides.
Use fume hood when handling powder form.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Avoid contact with eyes, skin, and clothing. Wear chemical splash goggles, chemical-resistant gloves, and a chemical-resistant apron. Use ventilation to keep airborne concentrations below exposure limits. Always wear a NIOSH-approved respirator with proper cartridges or a positive pressure, air-supplied respirator when handling this material in emergency situations (spill or fire).
Exposure guidelines: PEL 0.05 mg/m^3 (OSHA)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Heavy, ductile, gray solid.
Solubility: Soluble in dilute nitric acid. Insoluble in water.
Lead wire also contains 1% antimony (CAS #7440-36-0)
Formula: Pb
Formula Weight: 207.19

Boiling Point: 1740 °C
Melting Point: 327.4 °C
Specific Gravity: 11.35

SECTION 10 — STABILITY AND REACTIVITY

Avoid strong acids, ammonium nitrate, hydrogen peroxide, sodium azide, zirconium, sodium acetylide, and chlorine.
Shelf Life: Indefinite.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.
Chronic effects: Anemia, reproductive hazard, probable carcinogen.
Target organs: Nerves, blood, kidneys, female/male reproductive system.

ORL-RAT LD_{50}: N.A.
IHL-RAT LC_{50}: N.A.
SKN-RBT LD_{50}: N.A.

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

SECTION 12 — ECOLOGICAL INFORMATION

Accumulates in soil and water. Bioaccumulates in animals.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please consult with state and local regulations.
Flinn Suggested Disposal Method #27d 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 (231-100-4), RCRA code D008.

SECTION 16 — OTHER INFORMATION

This Material Safety Data Sheet (MSDS) 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.

Mayco Industries, Inc.

MATERIAL SAFETY DATA SHEET – LEAD SHOT

SECTION 1 - PRODUCT IDENTIFICATION and COMPANY INFORMATION

Product Name: Lead Shot

Synonyms: Reclaimed Lead shot, Reload Lead, Magnum shot,

CAS No: 7439-92-1

Molecular Weight: 207.19

Chemical Formula: Pb

Contact Information:
Mayco Industries, Inc.
18 West Oxmoor Road
Birmingham, AL 35209

Phone: 205-942-4242

Sales: 800-749-6061

Web site: www.maycoindustries.com

SECTION 2 – COMPOSITION and INFORMATION on INGREDIENTS

Material	% by Wt.	CAS #	OSHA EXPOSURE LIMIT
Lead	95 – 99.99	7439-92-1	0.05 mg/cubic meter
Antimony	0.5 – 6.5	7440-36-0	0.50 mg/cubic meter
Arsenic	0.1 – 2.0	7440-38-2	0.01 mg/cubic meter

SECTION 3 – HAZARDS INDENTIFICATION

Potential Health Effects

Inhalation: Lead dust and fume can be absorbed through the respiratory system. Local irritation of bronchia and lungs can occur. In cases of acute exposure, symptoms such as metallic taste, chest and abdominal pain, and increased blood lead levels may follow.

Ingestion: POISON. The symptoms of lead poisoning include abdominal pain and spasms, nausea, vomiting and headache. Acute poisoning can lead to muscle weakness, metallic taste, loss of appetite, insomnia, dizziness, high levels of lead in blood and urine, coma and death in extreme cases.

Skin Contact: Lead may be absorbed through the skin after prolonged exposure. Contact over short periods may cause local irritation.

Eye Contact: May cause eye irritation.

Signs & Symptoms of Overexposure

Acute (short term) exposure: Lead is a potent, systemic poison; taken in large enough doses, lead can kill in a matter of days. Acute encephalopathy may arise which develops quickly to seizures, coma and death from cardio-respiratory arrest.

Chronic (long term) exposure: Chronic overexposure to lead may result in severe damage to blood forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle & joint pain, fine tremors, numbness, dizziness, hyperactivity, colic.

SECTION 4 – FIRST AID MEASURES

Emergency & First Aid Procedures
Inhalation: Remove from exposure. Get medical attention if individual experiences any of the acute effects listed above.

Skin: Wash thoroughly with soap and water.

Eyes: Flush with cool running water for at least 15 minutes. Get medical attention if irritation develops.

Ingestion: Get medical attention.

Potential to Cause Cancer
Lead has been proven to cause cancer in animals. Certain lead compounds are suspect human carcinogens.

SECTION 5 - FIRE and EXPLOSION DATA

Flash Point: Not applicable
Extinguishing Media: Dry chemical, foam or CO2
Special Fire Fighting Procedures: Use positive pressure, self-contained breathing apparatus.
Unusual Fire and Explosion Hazard: None
Lead is not considered to be a fire hazard. Powder/dust is flammable when heated or exposed to flame.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Protective Measures To Be Taken If Material Is Released Or Spilled: Mechanically collect material and place in drums. Use of a vacuum system with a high-efficiency filter is preferable. Process collected material through in-plant reclamation system or send to a lead smelter for reclamation following applicable federal, state and local regulations.

Use protective clothing, gloves and respiratory protection when cleaning up spills.

SECTION 7 – HANDLING and STORAGE

Precautions: Store in a protected area. Keep away from heat and sources of ignition. Do not ingest. Do not breathe dust or fume. Wear suitable protective clothing. Keep away from incompatibles such as oxidizing agents.

Other Handling & Storage Precautions
Occupational exposure to elemental lead, inorganic lead compounds and lead soaps (except in the construction industry and agricultural operations) is regulated by the Occupational Safety and Health Administration, Title 29 CFR 1910.1025, "Lead". The aforementioned OSHA regulation should be consulted to assure employees working with lead are properly protected. Exposure to lead in the construction industry is regulated by the Occupational Safety and Health Administration, Title 29 CFR, 1926.62.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Measures
Engineering Controls: Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust or fume, use ventilation to control airborne contaminants.

Work Practices: Avoid generating dust. Do not throw scrap to avoid generation of dust. Store scrap in appropriate containers and keep covered. Do not dry sweep or use compressed air to remove accumulations of lead dust. Vacuuming, using a high-efficiency filtration system is the preferred method for clean-up.

Personal Protection
If the OSHA exposure limit for lead is exceeded and engineering controls are not feasible, a half-face high efficiency respirator may be worn for up to ten times the exposure limit. Other recommended personal protective equipment (PPE) includes protective clothing, including boots and gloves to prevent prolonged skin contact, and safety glasses or goggles.

Other control Measures
Eating, drinking, smoking, and the application of cosmetics should not be permitted in areas where lead products are handled, processed, or stored.

SECTION 9 – PHYSICAL and CHEMICAL PROPERTIES

Material, at normal temperature, is: Solid
Boiling Point, at 760 mm Hg: 1740 C
Specific Gravity: 11.3 (Water = 1)
Vapor Density: Not Applicable
% Volatile by Weight: Not Applicable
Appearance & Odor: Small, solid, gray spheres with silvery cast. No odor
Melting Point: 327° C (620° F)
Vapor Pressure: 1 mm Hg @ 970
Solubility in Water: Slightly soluble in water in the presence of nitrates, ammonium and carbon dioxide
Evaporation Rate: Not applicable

SECTION 10 – STABILITY and REACTIVITY

Stability: Stable
Incompatibility (materials to avoid): Reactive with strong Oxidizers
Hazardous Polymerization: Will not occur
Conditions to Avoid: Avoid contact with incompatible materials

SECTION 11– TOXICOLOGICAL INFORMATION

Investigated as a tumorigen, mutagen and reproductive effector. Lead is a human reproductive hazard.
Lead is a probable human carcinogen, proven for animals.

SECTION 12– ECOLOGICAL INFORMATION

Precautions should be taken to prevent the release of lead into the environment. Lead may bioaccumulate to some extent

SECTION 13– DISPOSAL CONSIDERATIONS

Lead scrap can be recycled. Waste materials must be disposed in accordance with federal, state and local environmental requirements.

SECTION 14– TRANSPORT INFORMATION

Lead metal is not a DOT regulated material.

SECTION 15– OTHER REGULATORY INFORMATION

California Proposition 65: Lead in this product is known to the State of California to cause cancer, birth defects, reproductive harm, and other serious injury and would require a warning under the statute.

HMIS (U.S.A.)
Health Hazard: 1
Fire Hazard: 0
Reactivity: 0
Personal Protection: E

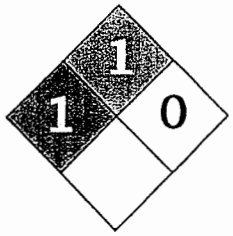
National Fire Protection Association (.U.S.A)
Health Hazard: 1
Flammability: 0
Reactivity: 0
Specific hazard:

SECTION 16– OTHER INFORMATION

Date MSDS Updated: September 1, 2009

Note: The information contained in this MSDS was obtained from sources that are believed to be reliable and represents the best information currently available to us. It is the users' responsibility to determine the suitability of this information for adoption of necessary safety precautions for their particular purposes. Mayco Industries, Inc. does not assume responsibility and expressly disclaims liability for any loss, damage, or expense arising out of, or in any way connected with the handling, storage, use, or disposal of the product identified in this MSDS.

ScienceLab.com
Chemicals & Laboratory Equipment



Health	1
Fire	1
Reactivity	0
Personal Protection	A

Material Safety Data Sheet
Litmus Paper (All Colors) MSDS

Section 1: Chemical Product and Company Identification

Product Name: Litmus Paper (All Colors)

Catalog Codes: SLL1807, SLL1219, SLL1597

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Cellulose

CI#: Not available.

Synonym:

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Litmus	1393-92-6	1
Cellulose	9004-34-6	99

Toxicological Data on Ingredients: Litmus LD50: Not available. LC50: Not available. Cellulose LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of eye contact (irritant), of ingestion, of inhalation. Non-irritant for skin.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to lungs, mucous membranes.
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: No known effect on eye contact, rinse with water for a few minutes.

Skin Contact: No known effect on skin contact, rinse with water for a few minutes.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust.

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Cellulose
TWA: 10 CEIL: 20 (mg/m3) from ACGIH [1995]
Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not applicable.

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Not available.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Not available.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans: The substance is toxic to lungs, mucous membranes.

Other Toxic Effects on Humans:
Slightly hazardous in case of ingestion, of inhalation.
Non-irritant for skin.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Cellulose
TSCA 8(b) inventory: Cellulose

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
This product is not classified according
to the EU regulations.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 0

Personal Protection: a

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Not applicable.
Lab coat.
Wear appropriate respirator when
ventilation is inadequate.
Safety glasses.

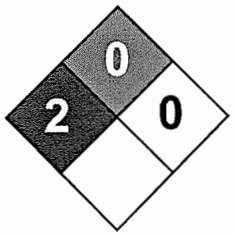
Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:59 PM

Last Updated: 11/06/2008 12:00 PM



Health	2
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Magnesium chloride hexahydrate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Magnesium chloride hexahydrate

Catalog Codes: SLM3697, SLM2926, SLM4306

CAS#: 7791-18-6

RTECS: OM2975000

TSCA: TSCA 8(b) inventory: Magnesium chloride hexahydrate

CI#: Not applicable.

Synonym:

Chemical Name: Magnesium dichloride hexahydrate

Chemical Formula: Mg-Cl2.6H2O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Magnesium chloride hexahydrate	7791-18-6	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to cardiovascular system, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

ye Contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. over the irritated skin with an emollient. If irritation persists, seek medical attention.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in resence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Store under nitrogen. When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is ot necessary to strain to reach materials, and that shelves are not overloaded.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent crystals solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 203.3 g/mole

Color: Not available.

pH (1% soln/water): 7 [Neutral.]

Boiling Point: Not available.

Melting Point: 118°C (244.4°F)

Critical Temperature: Not available.

Specific Gravity: 1.59 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol.

Solubility:
Easily soluble in cold water, hot water, methanol. Insoluble in diethyl ether, n-octanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances:

Reactive with oxidizing agents. Non-reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

pecial Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 8100 mg/kg [Rat.].

Chronic Effects on Humans: The substance is toxic to cardiovascular system, upper respiratory tract.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Material is irritating to mucous membranes and upper respiratory tract.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, irth defects or other reproductive harm, which would require a warning under the statute: Magnesium chloride hexahydrate
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer

which would require a warning under the statute: Magnesium chloride hexahydrate TSCA 8(b) inventory: Magnesium chloride hexahydrate

Other Regulations: Not available..

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
This product is not classified according to the EU regulations.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

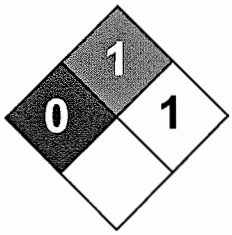
Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II.

Other Special Considerations: Not available.

Created: 10/10/2005 08:21 PM

Last Updated: 11/01/2010 12:00 PM



Health	1
Fire	3
Reactivity	2
Personal Protection	E

Material Safety Data Sheet
Magnesium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Magnesium

Catalog Codes: SLM4408, SLM2263, SLM3637

CAS#: 7439-95-4

RTECS: OM2100000

TSCA: TSCA 8(b) inventory: Magnesium

CI#: Not applicable.

Synonym: Magnesium ribbons, turnings or sticks

Chemical Name: Magnesium

Chemical Formula: Mg

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Magnesium	7439-95-4	100

Toxicological Data on Ingredients: Magnesium LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Flammable in presence of acids, of moisture. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of acids, of moisture.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Magnesium turnings, chips or granules, ribbons, are flammable. They can be easily ignited. They may reignite after fire is extinguished. Produces flammable gases on contact with water and acid. May ignite on contact with water or moist air. Magnesium fires do not flare up violently unless moisture is present.

Special Remarks on Explosion Hazards: Reacts with acids and water to form hydrogen gas with is highly flammable and eplosive

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Flammable solid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, moisture.

Storage:
Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Moisture sensitive. Dangerous when wet.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 24.31 g/mole

Color: Silver-white

pH (1% soln/water): Not applicable.

Boiling Point: 1100°C (2012°F)

Melting Point: 651°C (1203.8°F)

Critical Temperature: Not available.

Specific Gravity: 1.74 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:
Very slightly soluble in hot water. Insoluble in cold water. Insoluble in chromium trioxides, and mineral acids, alkalies. Slightly soluble with decomposition in hot water. Soluble in concentrated hydrogen fluoride, and ammonium salts.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, incompatible materials, water or moisture, moist air.

Incompatibility with various substances: Reactive with oxidizing agents, acids, moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Violent chemical reaction with oxidizing agents. Reacts with water to create hydrogen gas and heat. Must be kept dry. Reacts with acids to form hydrogen gas which is highly flammable and explosive. Magnesium forms hazardous or explosive mixtures with aluminum and potassium perchlorate; ammonium nitrate; barium nitrate, barium dioxide and zinc; beryllium oxide; boron phosphodiiodide; bromobenzyl trifluoride; cadmium cyanide; cadmium oxide; calcium carbide; carbonates; carbon tetrachloride; chlorine; chlorine trifluoride; chloroform; cobalt cyanide; copper cyanide; copper sulfate(anhydrous), ammonium nitrate, potassium chlorate and water; cupric oxide; cupric sulfate; fluorine; gold cyanide; hydrogen and calcium carbonate; hydrogen iodide; hydrogen peroxide; iodine; lead cyanide; mercuric oxide; mercury cyanide; methyl chloride; molybdenum trioxide; nickel cyanide; nitric acid; nitrogen dioxide; oxygen (liquid); performic acid; phosphates; potassium chlorate; potassium perchlorate; silver nitrate; silver oxide; sodium perchlorate; sodium peroxide; sodium peroxide and carbon dioxide; stannic oxide; sulfates; trichloroethylene; zinc cyanide; zinc oxide.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation by mechanical action. May get mechanical injury or embedding of chips/particles in skin. The particles that are embedded in the wounds may retard healing. Eyes: May cause eye irritation by mechanical action. Mechanical injury may occur. Particles or chips may embed in eye and retard healing. Inhalation: Low hazard for ususal industrial handling. It may cause respiratory tract irritation. However, it is unlikely due to physical form. When Magnesium metal is heated during welding or smelting process, Metal Fume Fever may result from inhalation of magnesium fumes. Metal Fume Fever is a flu-like condition consisting of fever, chills, sweating, aches, pains, cough, weakness, headache, nausea, vomiting, and breathing difficulty. Other symptoms may include metallic taste, increased white blood cell count. There is no permanent ill-effect. Ingestion: Low hazard for usual industrial handling. There are no known reports of serious industrial poisonings with Magnesium. Ingeston of large amounts of chips, turnings or ribbons may cause gastrointestinal tract irritation with nausea, vomiting, and diarrhea. Acute ingestion may also result in Hypermagnesia. Hypermagnesia may cause hypotension, bradycardia, CNS depression, respiratory depression, and impairment of neuromuscular transmission (hyporeflexia, paralysis).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Magnesium UNNA: 1869 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Magnesium Rhode Island RTK hazardous substances: Magnesium Pennsylvania RTK: Magnesium Massachusetts RTK: Magnesium Massachusetts spill list: Magnesium New Jersey: Magnesium TSCA 8(b) inventory: Magnesium

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-4: Flammable solid. CLASS B-6: Reactive and very flammable material.

DSCL (EEC):
R11- Highly flammable. R15- Contact with water liberates extremely flammable gases. S7/8- Keep container tightly closed and dry. S43- In case of fire, use dry chemical. Never use water.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 3

Reactivity: 2

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 06:00 PM

Last Updated: 11/01/2010 12:00 PM

Magnesium Sulfate, Anhydrous

MSDS # 434.00

ScholAR Chemistry

Section 1: Product and Company Identification

Magnesium Sulfate, Anhydrous Epsom Salt

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Crystalline powder, no odor.

CAUTION! Body irritant.
Target organs: None known.

HMIS (0 to 4)

Health	1
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

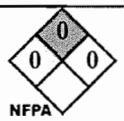
Magnesium Sulfate, Anhydrous (7487-88-9), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures



Nonflammable solid. When heated to decomposition, emits acrid fumes of sulfur oxides.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Magnesium Sulfate: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	$MgSO_4$.	**Appearance**	Crystalline powder.
Molecular weight	120.37.	**Odor**	None
Specific Gravity	2.66 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water and glycerin.
Melting Point	1122°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	200°C.	**Partition Coefficient**	N/A. *(log P_{OW})*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage. Hygroscopic
Incompatibility: None known
Shelf life: Poor shelf life, protect from light and heat.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Magnesium Sulfate: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-298-2).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

MATERIAL SAFETY DATA SHEET

Diemasters
PO Box 219, Skiatook, OK 74070
Phone 800-826-2134

Date prepared 3/01/03
Supersedes: 5/01/95
Emergency day/night phone: CHEMTREC 800-424-9300

<> IDENTIFICATION <>

Product name: **METAL.FIRE.XTNGSHR** (copyright trade name)
Synonyms: class D powder, G1 powder, mag.fire.xtngshr (all are fire fighting media)

<> HMIS RATING <>

Health = 1
Flammability = 0
Reactivity = 0

HMIS HAZARD INDEX
Minimal = 0
Slight = 1
Moderate = 2
Serious = 3
Severe = 4

<>HEALTH EFFECTS AND FIRST AID <>

EFFECTS OF ACUTE OVEREXPOSURE TO PRODUCT:
EYES: Irritant
SKIN: Slight irritant
SWALLOWING: Ingestion of large amounts may cause nausea and vomiting
BREATHING: Prolonged and repeated overexposure may lead to benign pneumoconiosis.

FIRST AID IF:
IN EYES: Flush with water for 15 minutes*
ON SKIN: Wash with soap and water*
BREATHED: Go to fresh air*
SWALLOWED: Rinse mouth, drink large amounts of water, induce vomiting*
* If discomfort continues seek medical attention

PRIMARY ROUTES OF ENTRY: Eyes, skin contact, breathing, swallowing

MEDICAL CONDITIONS AGGRIVATED BY OVEREXPOSURE: Emphysema & asthma

EFFECTS OF CHRONIC OVEREXPOSURE TO PRODUCT: None known

PRODUCT LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?
NATIONAL TOXOLOGY PROGRAM: **No.** IARC MONOGRAPHS: **No.** OSHA: **No.**

<> HAZARDOUS INGREDIENTS <>

Material	CAS No.	OSHA PEL	ACGIH TLV
Graphite (synthetic)	7782-42-5	10 total dust 5 respirable fraction	10 (c)*
KAOLIN	1332-58-7	10 total dust 5 respirable fraction	10 (c)*
MICA	12001-26-2	3 total dust 3 respirable fraction	

*(c) Total dust containing no asbestos and less than 1% crystalline silica

End of page 1, over for page 2

<> OTHER INGREDIENTS <>

Material	CAS No.	OSHA PEL	ACGIH TLV
SODIUM CHLORIDE	7647-14-5	10 total dust (a)* 5 respirable fraction	10 (b)*
HYDROS ALUMINA SILICATE	1318-94-1	10 total dust (a) 5 respirable fraction	10 (b)*

(a) Particulate matter not otherwise classified. Milligrams substance per cubic meter of air.
(b) Particulate matter not otherwise classified. Total dust containing no asbestos and less than 1% crystalline silica.

<> PHYSICAL & CHEMICAL CHARACTERISTICS <>

BOILING POINT: 2575°F	SPECIFIC GRAVITY: 2.18	VAPOR PRESSURE: N/A
PERCENT VOLITILE: N/A	VAPOR DENSITY: N/A	EVAPORATION RATE: N/A
SOLUBILITY IN WATER: Slight		MELTING POINT: N/A
pH: 7.0	FLASH POINT: N/A	AUTO IGNITION: N/A

APPEARANCE and ODOR: Mixture of white and dark gray-black crystalline powder. No characteristic odor.

FIRE EXTINGUISHER MEDIA: None. This material is an extinguishing agent for CLASS D fires (metal fires).

SPECIAL FIRE FIGHTING PROCEDURES: None FIRE AND EXPLOSION HAZARD: None

<> PHYSICAL HAZARDS <>

STABILITY: Stable CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (materials to avoid): Bromine Trifluoride

HAZARDOUS DECOMPOSITION (when heated to decomposition): CO, CO_2, CL_2 and NA_2O

HAZARDOUS POLYMERIZATION: Will not occur.

<> SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES <>

STEPS TO BE TAKEN IF PRODUCT IS RELEASED OR SPILLED: Sweep up and contain. Dispose of in accordance with local, state and federal regulations.

PRECAUIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep dry. Do not cross contaminate with other fire extinguisher agents.

End of page 2. End of MSDS

#9999 MSDS

Material Safety Data Sheet (MSDS) for Nonfat Dry Milk

Cell Signaling TECHNOLOGY®

rev. 10/24/08

I. Identification:

Product name: Nonfat Dry Milk

Product Catalog: 9999

Manufacturer Supplier: Cell Signaling Technology
3 Trask Lane
Danvers, MA 01923 USA
1-978-867-2300 TEL
1-978-867-2400 FAX
1-978-578-6737 Emergency TEL

II. Composition/Information on Ingredients:

Substance Name: nonfat-dried milk from bovine
CAS#: none

III. Hazard Identification:

HMIS rating	NFPA Rating
Health: 0	Health: 0
Flammability: 0	Flammability: 0
Reactivity: 0	Reactivity: 0

IV. First Aid Measures:

Inhalation: Remove to fresh air. If breathing is difficult, get medical attention.
Ingestion: If person is conscious wash out mouth with water. Get medical attention.
Skin exposure: Wash skin with soap and water. If irritation develops or persists, get medical attention.
Eye exposure: Immediately flush eyes water for at least 15 minutes lifting upper and lower lids. Get medical attention.

V. Fire Fighting Measures:

Flash Point: Not applicable
Autoignition Temperature: Not applicable
Explosion: Not considered not applicable.
Fire extinguishing media: Water spray, dry chemical, appropriate foam, or carbon dioxide.
Firefighting: Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes.
Specific Hazard: Emits toxic fumes under fire conditions.

VI. Accidental Release Measures:

Use personal proactive equipment as indicated in section VIII. Sweep up, avoid raising dust, and transfer to a suitable waste container for disposal. Wash spill site after material has been picked up.

VII. Handling And Storage:

Handling: Use with adequate ventilation. Avoid contact with eyes and skin, wash thoroughly after handling.
Storage: Store in tightly closed container in cool, dry place.

VIII. Exposure Controls/Personal:

Ventilation System: a system of local and/or general exhaust is recommended.
Skin Protection: wear protective gloves and lab coat to minimize contact with skin.
Eye protection: wear protective eyeglasses or chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical And Chemical Properties:

Appearance:	off-white powder
Odor:	slight
pH	data not available
Boiling Point:	data not available
Melting Point:	data not available
Volatile Organic Compounds (VOC):	data not available
Solubility:	Soluble in water

X. Stability and Reactivity:

Stability: Stable
Conditions to avoid: strong oxidizing agents.
Hazardous Decomposition Products: data not available.
Hazardous polymerization: data not available.

XI. Toxicological Information:

Routes of Exposure
Skin: May cause skin irritation. May be harmful if absorbed through the skin.
Eye: May cause eye irritation.
Inhalation: May be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

Signs and symptoms of exposure: To the best of our knowledge the chemical, physical, and toxicological properties have not been thoroughly investigated.

XII. Ecological Information: No data available.

XIII. Disposal Considerations:

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state and local environmental regulations.

XIV. Transport Information:

D.O.T.
Proper Shipping Name: None
This substance is considered non-hazardous for transport.

IATA
Proper Shipping Name: None
This substance is considered non-hazardous for air transport.

XV. Regulatory Information:

US Regulatory Information:
SARA: Not listed

Canada (WHMIS): Not listed on DSL/NDSL

XVI. Other Information:

This compound is sold only for research use by personnel familiar with chemicals and who are well trained in good laboratory habits, such as avoiding spills, keeping hands clean at all times and not rubbing eyes with hands while working in the laboratory. This product is not intended for drug, household, or other uses.

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide for experienced personnel. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product. The burden of safe use of this material rests entirely with the user.

Nickel

MSDS # 482.10

ScholAR Chemistry

Section 1: Product and Company Identification

Nickel

Synonyms/General Names: Nickel metal
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Hard white metal shot, no odor.

This material is not considered hazardous.
Target organs: None known.

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

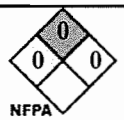
Nickel (7440-02-0), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures



When heated to decomposition, emits acrid fumes
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or to static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines: Nickel: OSHA PEL: 1 mg.m^3, ACGIH TLV: 1.5 mg.m^3, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	Ni.	**Appearance**	Hard, white metal shot.	
Molecular weight	58.71.	**Odor**	No odor.	
Specific Gravity	8.9g/mL @ 20°C.	**Odor Threshold**	N/A.	
Vapor Density (air=1)	N/A.	**Solubility**	N/A.	
Melting Point	1452°C.	**Evaporation rate**	N/A.	*(Butyl acetate = 1)*
Boiling Point/Range	2732°C.	**Partition Coefficient**	N/A.	*(log P_{OW})*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.	
Flash Point:	N/A.	**LEL**	N/A.	
Autoignition Temp.:	N/A.	**UEL**	N/A.	

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
Stability: Stable under normal conditions of use.
Incompatibility: Acids, ammonium nitrate, perchlorates, phosphorus, selenium, sulfur.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: Repeated/prolonged skin contact may cause dryness or rashes. Suspect carcinogen.
Sensitization: none expected
Nickel: LD50 [oral, rat]; >5 g/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material is suspected to be a carcinogen or produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-11-4).
TSCA: All components are listed or are exempt.
WHMIS Canada: D2A, D2B; Toxic material causing serious effects.
California Proposition 65: Listed – Cancer.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Phenol Red

MSDS # 521.00

ScholAR Chemistry

Section 1: Product and Company Identification

Phenol Red

Synonyms/General Names: Phenol Red, pH indicator, water soluble.
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Reddish-brown crystalline powder, no odor.

DANGER! Body tissue irritant and slightly toxic by ingestion.
Target organs: None known.

HMIS (0 to 4)

Health	1
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Phenol Red, sodium salt (34487-61-1), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. ***Do not induce vomiting***. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Contain spill and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines Phenol Red: OSHA PEL: N/A, ACGIH TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	$C_{19}H_{13}NaO_5S$.	**Appearance**	Reddish-brown crystalline powder.
Molecular weight	376.37.	**Odor**	No odor.
Specific Gravity	N/A.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Completely soluble in water.
Melting Point	Decomposes at 285°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW})*
Vapor Pressure (20°C)	N/A.	**pH**	Indicator: pH 6.8 yellow to 8.4 red.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. ***Skin***: Redness, blistering, burning, itching, tissue destruction with slow healing. ***Ingestion***: Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. ***Inhalation***: Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.
Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.
Sensitization: none expected
Phenol Red: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (205-609-7).
WHMIS Canada: Not WHMIS controlled.
TSCA: All components are listed or are exempt.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Potassium Chloride

MSDS # 556.00

ScholAR Chemistry

Section 1: Product and Company Identification

Potassium Chloride

Synonyms/General Names: Potassium Muriate
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White crystalline powder, no odor.

CAUTION! Slightly toxic by ingestion.
Target organs: None known.

HMIS (0 to 4)

Health	**1**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Potassium Chloride (7447-40-7), >99%

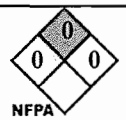
Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Nonflammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Potassium Chloride: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	KCl.	**Appearance**	White crystalline powder.
Molecular weight	74.56.	**Odor**	No odor.
Specific Gravity	1.98 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	2.58.	**Solubility**	Soluble in water, slightly in alcohol.
Melting Point	773°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	1411°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Acids,
Shelf life: Poor shelf life, hygroscopic, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Potassium Chloride: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed.
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Starch, Potato

MSDS # 715.00

ScholAR Chemistry

Section 1: Product and Company Identification

Starch, Potato

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White powder, bland odor

This material is not considered hazardous
Target organs: N/A

HMIS (0 to 4)

Health	**0**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Starch (9005-25-8), >99%.

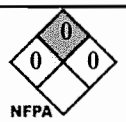
Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Non-flammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Starch: OSHA PEL: 5 mg/m^3(total dust)15 mg/m^3(respirable fraction), ACGIH: TLV: 10 mg/m^3, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	$(C_6H_{10}O_5)_n$.	**Appearance**	White powder.
Molecular weight	N/A.	**Odor**	Bland odor.
Specific Gravity	1.45 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water.
Melting Point	N/A .	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**UEL**	N/A.
Autoignition Temp.:	N/A.	**LEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: N/A
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Starch: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not yet been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not Regulated.	**Canada TDG:**	Not Regulated.
DOT Hazard Class:	N/A.	**Hazard Class:**	N/A.
Identification Number:	N/A.	**UN Number:**	N/A.

Section 15: Regulatory Information

EINECS: Listed (232-679-6).
WHMIS Canada: Not WHMIS controlled.
TSCA: All components are listed or are exempt.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Sodium Carbonate Anhydrous

MSDS # 647.00

ScholAR Chemistry

Section 1: Product and Company Identification

Sodium Carbonate Anhydrous

Synonyms/General Names: Soda Ash
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White powder, no odor.

CAUTION! Body tissue irritant.
Target organs: None known.

HMIS (0 to 4)

Health	**1**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Sodium Carbonate, Anhydrous (497-19-8), 100%

Section 4: First Aid Measures

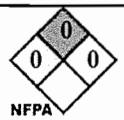
Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Sodium Carbonate: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	Na_2CO_3.	**Appearance**	White powder.
Molecular weight	105.99.	**Odor**	None.
Specific Gravity	2.53 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water and glycerin.
Melting Point	851°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	12, basic.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Acids.
Shelf life: Fair shelf life, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Sodium Carbonate: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (207-838-8) .
TSCA: All components are listed or are exempt.
WHMIS Canada:D2B, E: Toxic material, Corrosive material.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Sodium Chloride

MSDS # 652.00

ScholAR Chemistry

Section 1: Product and Company Identification

Sodium Chloride

Synonyms/General Names: Salt; Common Salt; Rock Salt
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White crystalline powder, no odor.

CAUTION! Slightly toxic by ingestion.
Target organs: None known.

HMIS (0 to 4)

Health	**1**
Fire Hazard	**0**
Reactivity	**0**

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

Section 3: Composition / Information on Ingredients

Sodium Chloride (7647-14-5), 100%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an dust cartridge. Exposure guidelines: Sodium Chloride: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	NaCl.	**Appearance**	White crystalline powder.
Molecular weight	58.44.	**Odor**	None.
Specific Gravity	2.17 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water .
Melting Point	800.7°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	1465°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Sulfuric acid, nitric acid.
Shelf life: Fair shelf life, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Sodium Chloride: LD50 [oral, rat]; 3000 mg/kg; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Not considered an environmental hazard.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-598-3)
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Starch, Potato

MSDS # 715.00

ScholAR Chemistry

Section 1: Product and Company Identification

Starch, Potato

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 CANUTEC (Canada): 613-424-6666

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

White powder, bland odor

This material is not considered hazardous
Target organs: N/A

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Starch (9005-25-8), >99%.

Section 4: First Aid Measures

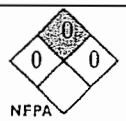
Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Non-flammable solid. When heated to decomposition, emits acrid fumes.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.

Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Starch: OSHA PEL: 5 mg/m^3(total dust)15 mg/m^3(respirable fraction), ACGIH: TLV: 10 mg/m^3, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	$(C_6H_{10}O_5)_n$.	**Appearance**	White powder.
Molecular weight	N/A.	**Odor**	Bland odor.
Specific Gravity	1.45 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Soluble in water.
Melting Point	N/A .	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	N/A.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**UEL**	N/A.
Autoignition Temp.:	N/A.	LEL	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: N/A
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: *Eyes*: Redness, tearing, itching, burning, conjunctivitis. *Skin*: Redness, itching. *Ingestion*: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. *Inhalation*: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Starch: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not yet been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

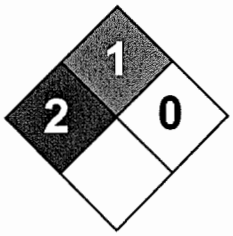
DOT Shipping Name:	Not Regulated.	**Canada TDG:**	Not Regulated.
DOT Hazard Class:	N/A.	**Hazard Class:**	N/A.
Identification Number:	N/A.	**UN Number:**	N/A.

Section 15: Regulatory Information

EINECS: Listed (232-679-6).
WHMIS Canada: Not WHMIS controlled.
TSCA: All components are listed or are exempt.
California Proposition 65: Not listed.
The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.



Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Sudan III MSDS

Section 1: Chemical Product and Company Identification

Product Name: Sudan III

Catalog Codes: SLS3712

CAS#: 85-86-9

RTECS: QK4250000

TSCA: TSCA 8(b) inventory: Sudan III

CI#: 26100

Synonym: Solvent Red 23; 1-((4-(phenylazo)phenyl)azo)-2-naphthalenol

Chemical Name: Not available.

Chemical Formula: C22H16N4O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sudan III	85-86-9	100

Toxicological Data on Ingredients: Sudan III LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. In case of insufficient ventilation, wear suitable

respiratory equipment If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 352.4 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Decomposes.

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Not available.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Sudan III

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R38- Irritating to skin. R41- Risk of serious damage to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/11/2005 12:41 PM

Last Updated: 11/01/2010 12:00 PM

Sun
Products Corporation

SAFETY DATA SHEET

Sun Sations Liquid Dish Detergent and Antibacterial Hand Soap with Oxygen - all variants

Section I. Identification of substance/preparation and company

Identification of the substance or preparation

Product Name	:	Sun Sations Liquid Dish Detergent and Antibacterial Hand Soap with Oxygen- all variants
Synonyms	:	Aqueous Mixture of Anionic and Nonionic Surfactants
CAS#	:	N/A
Use of the substance/preparation	:	Mixture
Manufacturer/Supplier	:	Ninigret Building XI Sun Products Corporation Attn: Consumer Relations 4750 West 2100 South, Suite 200 Salt Lake City, UT 84120
General Information Number	:	1-800-776-6702
Emergency Telephone Number	:	1-800-975-3194 (24 Hours)
Poison Control	:	1-800-949-7866 (24 Hours)
Chemtrec	:	1-800-424-9300 (24 Hours, Transportation Emergencies)

Section II. Composition/Information on ingredients

Ingredients as defined by the OSHA Hazard Communication Standard (29CFR § 1910.1200):

Chemical Name	CAS Number	ACGIH TLV	OSHA PEL	NIOSH REL	%
Triethanolamine	102-71-6				0-7
Linear Alkylbenzene Sulfonate	Mixture				5-20
Sodium Dodecylbenzenesulfonate	25155-30-0				5-20
Diethanolamine	111-42-2			REL-TWA 3ppm, 15 mg/m3	trace
Triclosan	3380-34-5				0.1
Lauramine Oxide	1643-20-5				< 1

Section III. First Aid Measures

Routes of Exposure		First Aid Instructions
Eye Contact	:	Promptly flush with large amounts of water for at least 15 minutes. Contact physician if redness or irritation persists.

Skin Contact	:	Promptly rinse with water. Remove contaminated clothing and shoes.
Ingestions (swallowed)	:	Do not induce vomiting. Drink a glass of milk or water. Call a physician
Inhalation	:	Move to fresh air.
Other	:	
* If symptoms persist, contact a physician		

Section IV. Fire Fighting Measures

Flash Point – Method:		:	>200 F
Autoignition Temperature		:	ND
Flammable Limits	**UFL**	:	ND
	LFL	:	ND
Extinguishing Media		:	Water mist, carbon dioxide, foams or dry chemicals.
Special Fire Fighting Procedures		:	Cool material with water
Fire / Explosion Hazard		:	None
Hazardous Combustion Products		:	None
Content Under Pressure		:	No
Explosive		:	No

Section V. Accidental Spill or Release Measures

Small or household Quantities	:	Spills and leaks may be cleaned up and disposed of in normal household trash.
Large (industrial) release	:	Material may be slippery if spilled. Prevent spill from entering a waterway. Stop spill at source and contain material. Contain with inert absorbent material. Transfer liquid to container for recovery or disposal. Dispose liquid in accordance with all applicable local, state, and federal regulations. Small amounts may be flushed to sewer.

Section VI. Safe Handling and Storage

No special handling precaustions necessary. Store in a dry area at 40F to 90F. Keep from freezing. Keep away from fire and heat. Keep containers closed when not in use. Provide adequate ventilation.

Section VII. Exposure Control/Personal Protection

For routine consumer use	:	No speical precaustions necessary as long as product is used as directed.		
For industrial activities				
		Respiratory Protection	:	None required under normal conditions. General ventilation required.
		Hand Protection	:	Gloves may be worn for protection.
		Eye Protection	:	Goggles or other protective eye wear may be worn for protection.
		Skin Protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Section VIII. Physical & Chemical Data

Appearance	:	Liquid

Odor	:	Characteristic or unscented
Color	:	Various tinted shades
Boiling Point	:	>200°F
Melting Point	:	ND
Freezing Point	:	Variable
Evaporation Rate	:	ND
Density (lbs/gal)	:	8.58 - 9.16
Specific Gravity (H_2O = 1)	:	1.0 - 1.10
Solubility in Water	:	Soluble in water
Vapor Pressure	:	ND
Viscosity	:	ND
pH	:	ND
pH (1% aqueous solution)	:	6.0-7.0
%Volatile	:	88% (including water)
Other	:	

Section IX. Stability & Reactivity Data

Stable	:	Yes
Conditions to Avoid	:	Extreme cold or heat
Incompatibilities	:	Strong oxidizers, acids, or bases
Hazardous Decomposition	:	None known
Hazardous Polymerization	:	Not available
Corrosive to Steel, Aluminum	:	No

Section X. Toxicology & Health Data

Potential acute health effects	:	Adverse health effects are considered unlikely when the product is used according to directions.
LD50	:	Not Determined
Threshold Limit Value	:	Not Determined
Effects of Acute Exposure		
Ingestion	:	May be harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting, and delayed diarrhea.
Inhalation	:	While inhalation of a product mist is unlikely, suck exposure may cause upper respiratory irritation.
Skin Contact	:	No irritation expected when used according to directions. Possible irritation from prolonged contact.
Eye Contact	:	May cause irritation and discomfort.
Effects of Chronic Exposure	:	None expected
Carcinogen Status	:	Non-carcinogenic

Section XI. Ecological Information

Other adverse effects	:	This product is not expected to harm the environment when used properly according to directions.

Biodegradable	:	Not Determined
Bioaccumulation	:	Not expected to be bioaccumulating.

Section XII. Recommended Waste Disposal Considerations

Method of disposal	:	Product does not meet the criteria of a hazardous waste under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with all regulations applicable to non-hazardous waste. Small amounts may be flushed to sewer. Large quantities should not be flushed into the sewer system. May foam profusely when hit with water stream.

Section XIII. Transportation Information

Regulatory Information	Land (US DOT)	Air (IATA/ICAO)	Water (IMO/IMDG)
Proper Shipping Name	N/A	N/A	N/A
Hazard Class	N/A	N/A	N/A
UN Number	N/A	N/A	N/A
Packing Group	N/A	N/A	N/A
Label Required	N/A	N/A	N/A
Additional Information	N/A	N/A	N/A

Section XIV. Regulatory Information

SARA 302 Hazardous Substances	:	None / no reportable quantites
SARA 304	:	Sodium Dodecylbenzenesulfonate Reportable Quantity: 1,000 lbs.
SARA 311/312 Hazard Categories	:	None / no reportable quantites
SARA 313 Emissions Reporting	:	None / no reportable quantites
Proposition 65 Listed Chemicals	:	None / no reportable quantites
TSCA	:	All Components of this product comply with TSCA inventory listing requirements
RCRA	:	See Section XI – Recommended Waste Disposal Considerations
CAA HAPS or Ozone Depletory	:	Not available
CA 22 CCR Hazardous Wastes	:	Not available
IL, MA, NJ, PA, RI State RTK & Hazardous Notifications	:	Not available
Canadian DSL/NDSL	:	Not available

Section XV. Hazard Rating Information

Extreme	=	4
Insignificant	=	0
Health	:	1
Fire	:	0
Reactivity	:	0

Section XVI. Other Information

HISTORY		
Date of Issue	:	01/07/2010
Date of Previous Issue	:	
Version	:	1.0

N/A: Not Applicable
ND : Not Determined

Notice to reader

Sun Products Corporation cannot anticipate all conditions of handling and use of this product. Therefore, Sun Products Corporation accepts no responsibility for results obtained by the application of this information, or the safety and suitability of our products either alone or in combination with other products.

It is the responsibility of the user to provide a safe workplace, using the health and safety information contained herein as a guide. Sun Products Corporation will accept no liability for damages or loss incurred from the improper use or handling of this product.

TOMPS ONLINE
220 New Road
Sutton Bridge
PE12 9QE
www.tomps.com

+44 (0)1406 351815

April 11, 2004

Material Safety Data Sheet (MSDS)

TALCUM POWDER – FRENCH CHALK

1. PRODUCT IDENTIFICATION

Product Name: talc powder
INCI Name: talc
Synonyms: magnesium silicate hydroxide, soapstone, steatite
CAS Number: 14807-96-6
EINECS Number: 238-877-9
Origin: natural, modified

2. PHYSICAL & CHEMICAL PROPERTIES

Melting Point:	150°C (320°F)
Boiling Point:	not determined
Vapor Pressure:	not determined
Vapor Density:	not determined
Evaporation Rate:	not determined
Density:	2.7 g/cm^3 at 20°C
Solubility in water:	insoluble
pH Value:	not determined
Appearance & Odor:	white fine powder, earthy odor

3. STABILITY & REACTIVITY

Chemical Stability: stable if stored light-protected
Incompatibility: alkali metals, alkaline earth metals
Hazardous Decomposition Products: no dangerous decomposition products known
Hazardous Polymerisation: will not occur

4. HANDLING & STORAGE

Avoid contact with eyes. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid freezing or excessive heat. Do not handle or store near an open flame, heat or other sources of ignition. Keep the container tightly closed and in a cool, wellventilated place.

5. ACCIDENTAL RELEASE MEASURES

Isolate spill area immediately. Keep unauthorized personnel away. Ventilate closed spaces before entering. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, basements or confined areas. Surface may become slippery after spillage. Use vacuum or broom sweeping and remove to disposal container. If damp, flush with water.

6. EXPOSURE CONTROLS & PERSONAL PROTECTION

Respiratory Protection: Where exposure likely exceeds acceptable criteria, use NIOSH/OSHA-approved respiratory equipment.
Protective Clothing: Gloves recommended to prevent skin contact. Safety glasses, goggles, or face shield recommended for eye protection.
Other Protective Measures: Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

7. HAZARDS IDENTIFICATION

Inhalation: Avoid breathing dust. May cause irritation to the respiratory tract.
Eye Contact: May cause irritation.
Skin Contact: May cause irritation.
Ingestion: May cause gastrointestinal disturbances.

8. FIRST AID MEASURES

Eyes: Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes. If irritation persists get medical attention.
Skin: Wash exposed areas of the body with soap and water.
Inhalation: Remove from area of exposure. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.
Ingestion: Seek immediate medical advice

9. FIRE FIGHTING MEASURES

Flash Point: Not applicable
Flammability, Danger of Explosion: not flammable or explosive
Fire Fighting Procedures: Firefighters should wear full firefighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

10. TOXICOLOGICAL INFORMATION

Acute Toxicity: no data available
Irritation Tests: irritant to skin and eyes
Sensitization: No sensitizing effects known
Chronic Toxicity: Inhalation of magnesium compounds may cause metal fume fever. Metallic magnesium perforates the skin and may cause local lesions. Some magnesium salts may cause muscle weakness, cardiac arrhythmias, respiratory effects and changes in blood chemistry following ingestion. Prolonged inhalation may cause pulmonary fibrosis known as silicosis. IARC-3: Not classifiable as to carcinogenicity to humans.

11. DISPOSAL CONSIDERATIONS

Storage and disposal must be in accordance with applicable local, state & federal disposal regulations. Compliance with applicable laws are the responsibility solely of the generator.

12. TRANSPORT INFORMATION

General: not regarded as hazardous material
DOT Regulations, Hazard Class: none
ADR/RIC Code, Hazard Class: none
Sea Transport IMDG Code, , Hazard Class: none
Air Transport IATA, , Hazard Class: none

13. DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the companys knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the users responsibility to satisfy himself as to the suitableness & completeness of such information for his own particular use.

ALL DATA HEREIN ARE ALL AS PER OUR SUPPLIER.

Tin

MSDS # 768.00

ScholAR Chemistry

Section 1: Product and Company Identification

Tin

Synonyms/General Names: Tin
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Metallic powder, granular, mossy, shot, sheet, foil; no odor.

HMIS (0 to 4)

Health	**0**
Fire Hazard	**0**
Reactivity	**0**

This material is not considered hazardous.
Target organs: None known

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

Section 3: Composition / Information on Ingredients

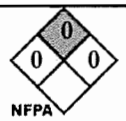
Tin (7440-31-5), 99.85%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures



Nonflammable solid. When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Tin: OSHA PEL: Not Available, ACGIH: TLV: Not Available, STEL: Not Available.

Section 9: Physical and Chemical Properties

Molecular formula	Sn.	**Appearance**	Metallic material.
Molecular weight	118.69.	**Odor**	No odor.
Specific Gravity	7.31 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	4.11.	**Solubility**	Insoluble.
Melting Point	232°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	2507°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	N/A.	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and moisture.
Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers, chlorine, cupric nitrate, potassium, sodium peroxide, sulfur, halogens, acids.
Shelf life: Indefinite if stored properly.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Tin: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Listed (231-141-8).
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009
Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***

Zinc Metal

MSDS # 798.00

ScholAR Chemistry

Section 1: Product and Company Identification

Zinc Metal

Synonyms/General Names: N/A
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300 **CANUTEC (Canada): 613-424-6666**

ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Silver metal sticks, pieces, sheet, strips, foil; no odor.

This material is not considered hazardous.
Target organs: None known.

HMIS (0 to 4)

Health	0
Fire Hazard	0
Reactivity	0

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

Section 3: Composition / Information on Ingredients

Zinc Metal (7440-66-6), 99%

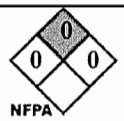
Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

When heated to decomposition, emits acrid fumes.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire. Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage Green

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skins, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in General Storage Area [Green Storage] with other items with no specific storage hazards. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an dust cartridge. Exposure guidelines: Zinc: OSHA PEL: N/A, ACGIH: TLV: N/A, STEL: N/A.

Section 9: Physical and Chemical Properties

Molecular formula	Zn.	**Appearance**	Silver metal material.
Molecular weight	65.37.	**Odor**	No odor.
Specific Gravity	7.12 g/mL @ 20°C.	**Odor Threshold**	N/A.
Vapor Density (air=1)	N/A.	**Solubility**	Insoluble.
Melting Point	420°C.	**Evaporation rate**	N/A. *(Butyl acetate = 1).*
Boiling Point/Range	907°C.	**Partition Coefficient**	N/A. *(log P_{OW}).*
Vapor Pressure (20°C)	N/A.	**pH**	N/A.
Flash Point:	N/A.	**LEL**	N/A.
Autoignition Temp.:	480°C (896°F).	**UEL**	N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Stability: Stable under normal conditions of use and storage.
Incompatibility: Strong oxidizers, acids, alkalis.
Shelf life: Fair shelf life, store in a cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: ***Eyes***: Redness, tearing, itching, burning, conjunctivitis. ***Skin***: Redness, itching. ***Ingestion***: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. ***Inhalation***: Irritation of mucous membranes, coughing, wheezing, shortness of breath,
Chronic Effects: No information found.
Sensitization: none expected
Zinc: LD50 [oral, rat]; N/A; LC50 [rat]; N/A; LD50 Dermal [rabbit]; N/A
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Contains a heavy metal – Toxic to terrestrial and aquatic plants and animals. Do not release to the environment

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer or trash disposal.

Section 14: Transport Information

DOT Shipping Name:	Not regulated by DOT.	**Canada TDG:**	Not regulated by TDG.
DOT Hazard Class:		**Hazard Class:**	
Identification Number:		**UN Number:**	

Section 15: Regulatory Information

EINECS: Not listed.
TSCA: All components are listed or are exempt.
WHMIS Canada: Not WHMIS Controlled.
California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. ***S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.***