

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 34.50

Revision Date: January 16, 2014

### 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

Signal Word N/A

Pictograms

### SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Aluminum	7429-90-5	Al	26.98	
Synonyms: Aluminum foil, strips, wire, sheet				

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Wash with plenty of water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Aluminum, as dust, is a flammable solid.

Powder Autoignition Temperature: 760 °C

When heated to decomposition, may emit toxic fumes.

**In case of fire:** Use class D fire extinguisher or dry sand for extinction (P370+P378).

NFPA CODE

H-0

F-1

R-1

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

Do not allow solid to become airborne. Ventilate area. Wipe up, place in sealed bag or container and dispose. Wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

---

**SECTION 7 — HANDLING AND STORAGE**

---

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

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling.

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Silvery solid. Odorless.

Boiling point: 2327 °C

Melting point: 660 °C

Specific gravity: 2.70

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

Contact with acids liberates flammable hydrogen gas.

Avoid contact with acids, acid chlorides, oxidizers, and halogens.

Shelf life: Indefinite, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: N.A.

ORL-RAT LD<sub>50</sub>: N.A.

Chronic effects: N.A.

IHL-RAT LC<sub>50</sub>: N.A.

Target organs: N.A.

SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

Flinn Suggested Disposal Method #26a is one option.

---

**SECTION 14 — TRANSPORT INFORMATION**

---

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

N/A = Not applicable

---

**SECTION 15 — REGULATORY INFORMATION**

---

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

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: January 16, 2014

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 265.00

Revision Date: January 21, 2014

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Copper

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

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

### SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Copper	7440-50-8	Cu	63.55	

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Wash with plenty of water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.

Noncombustible solid in bulk form, but air-borne dust may ignite.

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

NFPA CODE

None  
established

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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

---

**SECTION 7 — HANDLING AND STORAGE**

---

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

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Red-brown ductile metal. Also granules, shot, powder, sheet, wire, and foil turnings. Odorless.

Soluble: Nitric acid and hot sulfuric acid

Melting point: 1083 °C

Specific gravity: 8.92

TLV: 1 mg/cubic meter as dust or fume

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

Avoid contact with strong oxidizers, strong acids, bromates, chlorates, iodates, and halogens. Avoid contact with nitric acid, emits toxic fumes of nitrogen oxides.

Shelf life: Indefinite, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: N.A.

Chronic effects: N.A.

Target organs: N.A.

ORL-RAT LD<sub>50</sub>: N.A.

IHL-RAT LC<sub>50</sub>: N.A.

SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

Flinn Suggested Disposal Method #26a is one option.

---

**SECTION 14 — TRANSPORT INFORMATION**

---

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

N/A = Not applicable

---

**SECTION 15 — REGULATORY INFORMATION**

---

TSCA-listed, EINECS-listed (231-159-6), RCRA code D001.

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: January 21, 2014

# Material Safety Data Sheet

## Copper (II) Sulfate Pentahydrate

ACC# 05690

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Copper (II) Sulfate Pentahydrate**Catalog Numbers:** S73250, S73253, S73268, S73268-1, S73269, S73269-1, S73269-3, S73271, BP346-500, C489-1, C489-10, C489-500, C490-10, C490-3, C493-10, C493-100, C493-3, C493-500, C494, C494-12, C494-212, C494-500, C494250LB, C49612, C496212, S73250-1**Synonyms:** Blue Vitriol**Company Identification:**Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7758-99-8	Copper (II) sulfate pentahydrate	ca.100	unlisted

**Hazard Symbols:** XN N**Risk Phrases:** 22 36/38 50/53

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: blue. Air sensitive. **Warning!** Harmful if swallowed. Causes digestive and respiratory tract irritation with possible burns. Causes eye and skin irritation and possible burns. Hygroscopic. Mutagen. Possible sensitizer.

**Target Organs:** Blood, kidneys, liver.

#### Potential Health Effects

**Eye:** Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities. Causes eye irritation and possible burns.**Skin:** May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes skin irritation and possible burns. May cause itching eczema.**Ingestion:** Harmful if swallowed. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. Ingestion of large amounts of copper salts may cause bloody stools and vomit, low blood pressure, jaundice and coma. Ingestion of copper compounds may produce systemic toxic effects to the kidney and liver and central nervous excitation followed by depression.

**Inhalation:** May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. Causes respiratory tract irritation with possible burns.

**Chronic:** Prolonged or repeated eye contact may cause conjunctivitis. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage. Laboratory experiments have resulted in mutagenic effects. May cause allergic skin reaction in some individuals. Chronic copper poisoning in man is recognized in the form of Wilson's disease.

## Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Individuals with Wilson's disease are more susceptible to chronic copper poisoning.

**Antidote:** The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

**Extinguishing Media:** Use extinguishing media most appropriate for the surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Place under an inert atmosphere.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Do not ingest or inhale. Handle under an inert atmosphere. Store protected from air.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store protected from moisture. Store under an inert atmosphere.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Copper (II) sulfate pentahydrate	none listed	none listed	none listed

**OSHA Vacated PELs:** Copper (II) sulfate pentahydrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

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

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystals

**Appearance:** blue

**Odor:** Odorless

**pH:** Not available.

**Vapor Pressure:** 7.3 mm Hg @ 25 deg C

**Vapor Density:** Not available.

**Evaporation Rate:** Negligible.

**Viscosity:** Not available.

**Boiling Point:** 150 deg C (dec)

**Freezing/Melting Point:** 110 deg C (dec)

**Autoignition Temperature:** Not applicable.

**Flash Point:** Not applicable.

**Decomposition Temperature:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Reactivity: 0

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** 2.2840g/cm<sup>3</sup>

**Molecular Formula:** CuO<sub>4</sub>S<sub>5</sub>H<sub>2</sub>O

**Molecular Weight:** 249.68

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions. Air sensitive.

**Conditions to Avoid:** High temperatures, incompatible materials, dust generation, exposure to air, exposure to moist air or water.

**Incompatibilities with Other Materials:** Moisture, air, steel, finely powdered metals, hydroxylamine, magnesium, hydrazine, nitromethane.

**Hazardous Decomposition Products:** Oxides of sulfur, irritating and toxic fumes and gases, oxides of copper, copper fumes.

**Hazardous Polymerization:** Has not been reported

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 7758-99-8: GL8900000

**LD50/LC50:**

CAS# 7758-99-8:

Oral, rat: LD50 = 300 mg/kg;

Skin, rat: LD50 = >2 gm/kg;

**Carcinogenicity:**

CAS# 7758-99-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Neurotoxicity:** No information available.

**Mutagenicity:** DNA Inhibition: Human, Lymphocyte = 76 umol/L.; Unscheduled DNA Synthesis: Rat, Liver = 31 umol/L.; Cytogenetic Analysis: Rat, Ascites tumor = 300 mg/kg.; Micronucleus Test: Intraperitoneal, mouse = 5 mg/kg.

**Other Studies:** No information available.

## Section 12 - Ecological Information

**Ecotoxicity:** Fish: Rainbow trout: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified Harlequin fish: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified Goldfish: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified flea Daphnia: EC50 = 0.24 mg/L; 48 Hr; Unspecified In soil, copper sulfate is partly washed down to lower levels, partly bound by soil components, and partly oxidatively transformed. Copper has a strong affinity for hydrous iron and manganese oxides, clays, carbonate minerals, and organic matter. Sorption to these materials ... suspended in the water column & in the bed sediments, results in relative enrichment of the solid phase and reduction in dissolved levels.

**Environmental:** Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. This lack of biomagnification appears common with heavy metals. In air, copper aerosols (in general) have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to > 4 days in polluted, urban areas.

**Physical:** No evidence was found to indicate that there is any biotransformation process for copper compounds which would have a significant bearing on the fate of copper in aquatic environments.

**Other:** None.



## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
<b>Shipping Name:</b>	RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CUPRIC SULFATE)				CUPRIC SULFATE
<b>Hazard Class:</b>	9				9.2
<b>UN Number:</b>	UN3077				UN9109
<b>Packing Group:</b>	III				II
<b>Additional Info:</b>					REGULATED LIMIT 5 KG

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 7758-99-8 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### SARA

#### Section 302 (RQ)

None of the chemicals in this material have an RQ.

#### Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 7758-99-8: acute, chronic.

**Section 313**

This material contains Copper (II) sulfate pentahydrate (listed as \*\* undefined \*\*), 100%, (CAS# 7758-99-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 7758-99-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN N

**Risk Phrases:**

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.

R 50/53 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

**Safety Phrases:**

S 22 Do not breathe dust.

S 60 This material and/or its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

**WGK (Water Danger/Protection)**

CAS# 7758-99-8: 2

**Canada****Canada**

None of the chemicals in this product are listed on the DSL or NDSL list. This product has a WHMIS classification of D1B, D2A.

CAS# 7758-99-8 is not listed on Canada's Ingredient Disclosure List.

**Exposure Limits**

CAS# 7758-99-8: OEL-ARAB Republic of Egypt:TWA 0.1 mg(Cu)/m<sup>3</sup> (fume)  
OEL-AUSTRALIA:TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-AUSTRALIA:TWA 1 mg(Cu)/m<sup>3</sup>  
(dust) OEL-BELGIUM:TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-BELGIUM:TWA 1 mg(Cu)  
) /m<sup>3</sup> (dust) OEL-DENMARK:TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-DENMARK:TWA 1 m  
g(Cu)/m<sup>3</sup> (dust) OEL-FINLAND:TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-FINLAND:TWA  
1 mg(Cu)/m<sup>3</sup> OEL-FINLAND:TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-FRANCE:TWA 0.2 m  
g(Cu)/m<sup>3</sup> (fume) OEL-FRANCE:TWA 1 mg(Cu)/m<sup>3</sup>;STEL 2 mg(Cu)/m<sup>3</sup> (dust OE  
L-GERMANY:TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-GERMANY:TWA 1 mg(Cu)/m<sup>3</sup> OEL-G  
ERMANY:TWA 1 mg(Cu)/m<sup>3</sup> (dust) OEL-HUNGARY:TWA 0.2 mg(Cu)/m<sup>3</sup>;STEL 0.4  
mg(Cu)/m<sup>3</sup> (dust) OEL-INDIA:TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-THE NETHERLA  
NDS:TWA 02 mg(Cu)/m<sup>3</sup> (fume) OEL-THE NETHERLANDS:TWA 1 mg(Cu)/m<sup>3</sup> (dust  
) OEL-THE PHILIPPINES:TWA 1.0 mg(Cu)/m<sup>3</sup> (fume) JAN9 OEL-POLAND:TWA 0  
.1 mg(Cu)/m<sup>3</sup> (fume) OEL-RUSSIA:STEL 0.5 ppm (1 mg(Cu)/m<sup>3</sup>) (dust) JAN9

OEL-SWEDEN:TWA 0.2 mg(Cu)/m<sup>3</sup> (resp. dust) OEL-SWEDEN:TWA 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-SWEDEN:TWA 1 mg(Cu)/m<sup>3</sup> (total dust) OEL-SWITZERLAND:TWA 0.1 mg(Cu)/m<sup>3</sup>;STEL 0.2 mg(Cu)/m<sup>3</sup> (fume) OEL-SWITZERLAND:TWA 1 mg(Cu)/m<sup>3</sup>;STEL 1 mg(Cu)/m<sup>3</sup> OEL-THAILAND:TWA 0.1 mg(Cu)/m<sup>3</sup> (fume) OEL-THAILAND:TWA 1 mg(Cu)/m<sup>3</sup> OEL-U

## Section 16 - Additional Information

**MSDS Creation Date:** 7/09/1999

**Revision #3 Date:** 8/02/2000

*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 Fisher 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 Fisher has been advised of the possibility of such damages.*

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 416.00

Revision Date: January 16, 2014

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Iron

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

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

### SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iron	7439-89-6	Fe	55.85	

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Wash with plenty of water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Finely divided iron can be flammable.

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

**NFPA CODE**  
None  
established

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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

---

**SECTION 7 — HANDLING AND STORAGE**

---

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

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Avoid contact with eyes. Wash hands thoroughly after handling.

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

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

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

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

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: Harmful dust. ORL-RAT LD<sub>50</sub>: 30 g/kg  
Chronic effects: N.A. IHL-RAT LC<sub>50</sub>: N.A.  
Target organs: N.A. SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

---

**SECTION 14 — TRANSPORT INFORMATION**

---

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

N/A = Not applicable

---

**SECTION 15 — REGULATORY INFORMATION**

---

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

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: January 16, 2014

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 432.00

Revision Date: March 25, 2014

### 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

Signal Word **DANGER**

Pictograms



### SECTION 2 — HAZARDS IDENTIFICATION

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

Hazard class: Carcinogenicity (Category 2). Suspected of causing cancer (H351). Obtain special instructions before use (P201). Do not handle until all safety precautions have been read and understood (P202). Use personal protective equipment as required (P281). Elemental lead is a possible human carcinogen (IARC-2B).

Hazard class: Reproductive toxicity (Category 1A). May damage fertility or the unborn child (H360).

Hazard class: Specific target organ toxicity, repeated exposure (Category 2). May cause damage to organs through prolonged or repeated exposure (H373). Do not eat, drink or smoke when using this product (P270).

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Lead Forms: foil, sheets, shot, strips, and wire.	7439-92-1	Pb	207.19	

### SECTION 4 — FIRST AID MEASURES

**If exposed or concerned:** Get medical advice or attention (P308+P313).

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

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

**If on skin:** Wash with plenty of water.

**If swallowed:** Rinse mouth. Immediately call a POISON CENTER or physician (P301+P310+P330).

### SECTION 5 — FIRE FIGHTING MEASURES

Finely divided lead dust is flammable.

Molten metal may release toxic fumes of lead.

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

**NFPA CODE**  
None  
established

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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 #1. Store with metals and metal hydrides.  
Use fume hood when handling powder form.

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Use fume hood when handling powder form.

Exposure guidelines: PEL/TLV 0.05 mg/m<sup>3</sup> (OSHA/ACGIH)

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Heavy, ductile, gray solid. Odorless.

Soluble: Dilute nitric acid. Insoluble in water.

Lead wire also contains 1% antimony (CAS #7440-36-0)

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, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: Convulsions, seizures, weakness, muscle cramps, methemoglobinemia.

Chronic effects: Anemia, reproductive hazard, possible carcinogen.

Target organs: Nerves, brain, blood, kidneys, female/male reproductive system

ORL-Pigeon LD<sub>0</sub>: 160 mg/kg

IHL-Human LCL<sub>0</sub>: 10 ug/m<sup>3</sup>

SKN-RBT LD<sub>50</sub>: 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. Very toxic to aquatic life with long lasting effects

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

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

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

Revision Date: March 25, 2014

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 468.00

Revision Date: March 21, 2014

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Magnesium

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

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



### SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable solids (Category 1). Flammable solid (H228). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Magnesium	7439-95-4	Mg	24.31	

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Wash with plenty of water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Flammable solid.

Water reactive metal; avoid contact with acids or water. When heated to decomposition, may emit toxic fumes.

**In case of fire:** Use a Class D or dry sand as a fire extinguisher. Avoid water contact, violent reaction with water.

NFPA CODE

H-0

F-1

R-1

No Water

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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 #1. Store with metals and metal hydrides.  
Store in a Flinn Saf-Stor™ can.

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Silvery-white metal turnings or ribbon. Odorless.  
Soluble: Acids. Insoluble in water.

Melting point: 651 °C  
Specific gravity: 1.74

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

Avoid contact with water, acids, acid chlorides, strong oxidizers, halogens, and chlorinated solvents.  
Shelf life: Indefinite, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

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

ORL-RAT LD<sub>50</sub>: N.A.  
IHL-RAT LC<sub>50</sub>: N.A.  
SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

---

**SECTION 14 — TRANSPORT INFORMATION**

---

Shipping name: Magnesium. Hazard class: 4.1, Flammable solid. UN number: UN1869.

N/A = Not applicable

---

**SECTION 15 — REGULATORY INFORMATION**

---

TSCA-listed, EINECS-listed (231-104-6), RCRA code D001.

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: March 21, 2014

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 822.00

Revision Date: March 25, 2014

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Tin

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

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

### SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Tin	7440-31-5	Sn	118.69	

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Rinse with water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid. Finely divided metal may be combustible.

When heated to decomposition, may emit toxic fumes.

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

NFPA CODE

None

established

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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

---

**SECTION 7 — HANDLING AND STORAGE**

---

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

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

Exposure guidelines: PEL/TLV 2 mg/m<sup>3</sup> (OSHA/ACGIH)

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Silver-white, ductile solid. Forms: granular, mossy, shot, and foil.  
Odorless.

Soluble: Acids and hot potassium hydroxide solution. Insoluble in water.

Boiling point: 2507 °C

Melting point: 232 °C

Specific gravity: 7.310

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

Avoid contact with strong oxidizers, sulfur, strong bases, halogens.

Shelf life: Indefinite, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: N.A.

Chronic effects: N.A.

Target organs: N.A.

ORL-RAT LD<sub>50</sub>: N.A.

IHL-RAT LC<sub>50</sub>: N.A.

SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

Flinn Suggested Disposal Method #27a 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 (231-141-8), RCRA code D001.

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: March 25, 2014

# FLINN SCIENTIFIC, INC.

## Safety Data Sheet (SDS)

SDS #: 859.00

Revision Date: March 21, 2014

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Zinc

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

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



### SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Substances and mixtures which, in contact with water, emit flammable gases (Category 1). In contact with water releases flammable gases which may ignite spontaneously (H260). Handle under inert gas. Protect from moisture (P231+P232). Keep away from any possible contact with water, because of violent reaction and possible flash fire (P223).

### SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Zinc	7440-66-6	Zn	65.37	

### SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

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

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

**If on skin:** Brush off loose particles from skin (P335). Wash with plenty of water.

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

### SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.

Finely divided zinc dust is a severe fire hazard. Zinc dust in contact with acids, water or damp air evolves hydrogen gas. The heat produced may ignite the hydrogen gas. Minimize contact with moisture.

**In case of fire:** Use a tri-class dry class fire extinguisher (P370+P378). If there is contact with water use class D fire extinguisher according to NFPA book.

**NFPA CODE**  
None  
established

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

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 #1. Store with metals and metal hydrides.

---

**SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling.

---

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

---

Shiny white metal with bluish-gray luster. Forms: granular, mossy dust, metal pieces, foil, sheets, shot, strips. Odorless. Soluble: Acids and alkalis. Insoluble in water.

Boiling point: 908 °C  
Melting point: 419 °C  
Specific gravity: 7.14

---

**SECTION 10 — STABILITY AND REACTIVITY**

---

Avoid strong acids, strong bases, cadmium, sulfur chlorinated solvents, amines, and carbon disulfide. Avoid any source of flame for zinc dust only! Zinc dust can spontaneously combust when in contact with moisture.

Shelf life: Indefinite, if stored properly.

---

**SECTION 11 — TOXICOLOGICAL INFORMATION**

---

Acute effects: Dust may cause lung irritations.

ORL-RAT LD<sub>50</sub>: N.A.

Chronic effects: N.A.

IHL-RAT LC<sub>50</sub>: N.A.

Target organs: N.A.

SKN-RBT LD<sub>50</sub>: N.A.

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

---

**SECTION 12 — ECOLOGICAL INFORMATION**

---

Data not yet available.

---

**SECTION 13 — DISPOSAL CONSIDERATIONS**

---

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

Flinn Suggested Disposal Method #26a is one option.

---

**SECTION 14 — TRANSPORT INFORMATION**

---

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

N/A = Not applicable

---

**SECTION 15 — REGULATORY INFORMATION**

---

TSCA-listed, EINECS-listed (231-175-3).

---

**SECTION 16 — OTHER INFORMATION**

---

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

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

Revision Date: March 21, 2014