

## Section 1 Identification

Page E1 of E2

**INNOVATING SCIENCE**® by Aldon  
 221 Rochester Street  
 Avon, NY 14414-9409  
 (585) 226-6177

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

<b>Product</b>	ALUMINUM METAL
<b>Synonyms</b>	Aluminum ; Aluminum Metal

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** Not classified  
**Pictograms:** Not classified  
**Target organs:** None known.

**GHS Classification:** Not classified  
**GHS Label information: Hazard statement(s):** Not classified  
**Precautionary statement(s):** Not classified

**Supplementary information:**

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

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Combustible dust  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Aluminum	7429-90-5	>99.5%	231-072-3

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Sand, dry chemical, or CO<sub>2</sub> should be used on surrounding fire. Do NOT use water on fire where molten metal is present.

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear.

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Reacts with some acids and caustic solutions to produce hydrogen. Molten aluminum may explode on contact with water. It may also react violently with rust, certain metal oxides (e.g. oxides of copper, iron and lead) and nitrates (e.g. ammonium nitrate and fertilizers containing ammonium nitrate).

## Section 6 Accidental release measures

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

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

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

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale dust or fumes. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Aluminum, metal and insoluble compounds	TWA: 1 mg/m <sup>3</sup> (A4) Respirable fraction	TWA: 5 mg/m <sup>3</sup> Respirable fraction	TWA: 5 mg/m <sup>3</sup> Respirable fraction

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Solid. Silver-grey metallic granules <b>Odor:</b> No odor. <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> 660°C (1220°F) <b>Boiling point:</b> Data not available <b>Flash point:</b> Not applicable	<b>Evaporation rate ( = 1):</b> Not applicable <b>Flammability (solid/gas):</b> Not applicable <b>Explosion limits: Lower / Upper:</b> Not applicable <b>Vapor pressure (mm Hg):</b> Data not available <b>Vapor density (Air = 1):</b> 0.95 - 0.113 lb/in <sup>3</sup> <b>Relative density (Specific gravity):</b> Data not available <b>Solubility(ies):</b> Insoluble	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> Not applicable <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Al <b>Molecular weight:</b> 26.98
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## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures and heat.

**Incompatibilities with other materials:** Strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons, and water.

**Hazardous decomposition products:** Reacts with water (in molten form), acids or alkalis to generate hydrogen gas.

## Section 11 Toxicological information

**Acute toxicity:** Data not available

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation of dust or fumes may irritate respiratory system.

Ingestion: May be harmful if swallowed.

Skin: May cause irritation.

Eyes: Contact with eyes may cause irritation.

**Signs and symptoms of exposure:** It has been reported that chronic exposure has been suspected of causing lung injury. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: BD0330000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Aluminum	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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

## Section 1 Identification

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**Phone Number (800) 424-9300**  
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Product	PELLITIZED ACTIVATED CARBON
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Synonyms	None
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## Section 2 Hazards identification

Signal word: WARNING

Pictograms: GHS07

Target organs: Respiratory system, Eyes



## GHS Classification:

Eye irritation (Category 2B)

STOT (Category SE 3)

## GHS Label information: Hazard statement:

H320: Causes eye irritation.

H335: May cause respiratory irritation.

## Precautionary statement:

P264: Wash hands thoroughly after handling.

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

P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

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

**Note 1:** Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, this product has been tested according to the United Nations Transport of Dangerous Goods test protocol for a "self-heating substance" (United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self-Heating Substances) and it has been specifically determined that this product does not meet the definition of a self-heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material. This information is applicable only for the Activated Carbon Product identified in this document.

## Hazards not otherwise classified:

Health hazards not otherwise classified (HHNOC) - Combustible dust

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Carbon	7440-44-0	100%	231-153-3

## Section 4 First aid measures

**INGESTION:** MAY BE HARMFUL IF SWALLOWED. If the material is swallowed, get immediate medical attention or advice. DO NOT induce vomiting unless directed to do so by medical personnel.

**INHALATION:** MAY CAUSE RESPIRATORY IRRITATION. Remove person to fresh air. If not breathing, administer CPR or artificial respiration. Get immediate medical attention.

**EYE CONTACT:** CAUSES SERIOUS EYE DAMAGE. Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.

**SKIN ABSORPTION:** MAY CAUSE SKIN IRRITATION. If skin reddening or irritation develops, seek medical attention.

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** In case of fire, flood with plenty of water.

**Protective Actions for Fire-fighters:** Firefighters should wear full protective gear.

**Specific Hazards:** Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, etc. may result in fire.

## Section 6 Accidental release measures

**Personal Precautions:** Use proper personal protective equipment as indicated in Section 8. Avoid contact with the skin and eyes.

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

**Containment and Cleanup:** Remove all sources of ignition. Shovel or sweep up and place in closed container for proper disposal. Wash spill area with soap and water.

**Precautions for Safe Handling:** Read label on container before using. Do not wear contact lenses when working with chemicals. Keep out of reach of children. Avoid contact with eyes. Do not inhale dusts. Use with adequate ventilation. Wet activated carbon removes oxygen from air causing severe hazard to workers inside carbon vessels or confined space. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Conditions for Safe Storage:** Protect containers from physical damage. Store in dry, cool, well-ventilated area.

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	None established	None established	None established	None established

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Solid. Black pellet. <b>Odor:</b> Data not available. <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available <b>Melting / Freezing point:</b> Data not available <b>Boiling point:</b> Data not available <b>Flash point:</b> Data not available.	<b>Evaporation rate ( = 1):</b> Data not available <b>Flammability (solid/gas):</b> Data not available. <b>Explosion limits: Lower / Upper:</b> Data not available <b>Vapor pressure (mm Hg):</b> Data not available <b>Vapor density (Air = 1):</b> Data not available <b>Relative density (Specific gravity):</b> 28-33 lb/cuft <b>Solubility(ies):</b> Data not available.	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> Data not available <b>Decomposition temperature:</b> Data not available <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Mixture <b>Molecular weight:</b> Mixture
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## Section 10 Stability and reactivity

**Chemical stability:** Stable under normal conditions

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** None

**Incompatible materials:** Strong oxidizers and reducing agents such as ozone, liquid oxygen or chlorine.

**Hazardous decomposition products:** Carbon monoxide may be generated in the event of a fire.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: >10,000 mg/kg

**Skin corrosion/irritation:** Not classified

**Serious eye damage/irritation:** Causes eye irritation

**Respiratory or skin sensitization:** Not classified

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

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

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

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

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

**Reproductive toxicity:** Not classified

**STOT-single exposure:** May cause respiratory irritation

**STOT-repeated exposure:** Not classified

**Aspiration hazard:** Not classified

**Potential health effects:**

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: May cause skin irritation.

Eyes: May cause eye irritation.

**Signs and symptoms of exposure:** To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not applicable

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Activated carbon	Listed	Not listed	Not listed	Not Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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

## Section 1 Identification

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 Not for drug, food or household use.

<b>Product</b>	SILICON METAL, LUMPS
<b>Synonyms</b>	Silicon Metal

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** None required

**Pictograms:** No symbol required

**Target organs:** None known

**GHS Classification:** None required

**GHS Label information: Hazard statement:** None required

**Precautionary statement:** None required

**Supplemental information:**

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

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Silicon metal lumps	7440-21-3	100%	231-130-8

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

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

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

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

## Section 6 Accidental release measures

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

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

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

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

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

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Silicon	Not established	TWA: 5 mg/m <sup>3</sup> Respirable fraction	TWA: 5 mg/m <sup>3</sup> Respirable fraction

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

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

## Section 9 Physical and chemical properties

**Appearance:** Solid, metallic silver lumps.

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** 1440°C (2624°F)

**Boiling point:** Data not available

**Flash point:** Not flammable

**Evaporation rate ( = 1):** Data not available

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** Data not available

**Vapor pressure (mm Hg):** Data not available

**Vapor density (Air = 1):** Data not available

**Relative density (Specific gravity):** 2.3

**Solubility(ies):** Insoluble in water.

**Partition coefficient:** Data not available

**Auto-ignition temperature:** Data not available

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Si

**Molecular weight:** 28.09

## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Avoid generation of airborne dust.

**Incompatible materials:** Acids and strong bases.

**Hazardous decomposition products:** None known.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: 3160 mg/kg

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Skin: Contact with may cause irritation.

Eyes: Contact with may cause irritation.

**Signs and symptoms of exposure:** Low hazard in the form of lumps. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: VV0400000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #** Not applicable

## Section 15 Regulatory information

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

Component	TSCA	CERCLA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Silicon	Listed	Not listed	D001	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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



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**CHEMTREC 24 Hour Emergency**  
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 For laboratory and industrial use only.  
 Not for drug, food or household use.

<b>Product</b>	ZINC SHOT
<b>Synonyms</b>	Zinc / Zinc Metal / Zinc Metal Shot

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** Not classified  
**Pictograms:** Not classified  
**Target organs:** None known

**GHS Classification:** Not classified  
**GHS Label information: Hazard statement(s):** Not classified  
**Precautionary statement(s):** Not classified

**Supplemental information:**

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

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Combustible dust  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Zinc, shot	7440-66-6	100%	231-175-3

## Section 4 First aid measures

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

**INHALATION:** HARMFUL IF INHALED AS FUME. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use triclass, dry chemical fire extinguisher. Do NOT use water on fire where molten metal is present.

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

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents. Small chips, turnings, and dust with ignite readily. Dust cloud may be explosive.

## Section 6 Accidental release measures

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

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

**Containment and Cleanup:** Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes from molten metals. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

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

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Solid. Metallic silver-gray pellets <b>Odor:</b> No odor. <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> 419°C (787°F) <b>Boiling point:</b> 907°C (1665°F) <b>Flash point:</b> Not applicable	<b>Evaporation rate ( = 1):</b> Not applicable <b>Flammability (solid/gas):</b> Not applicable <b>Explosion limits: Lower / Upper:</b> Not applicable <b>Vapor pressure (mm Hg):</b> Data not available <b>Vapor density (Air = 1):</b> Data not available <b>Relative density (Specific gravity):</b> 7.12 <b>Solubility(ies):</b> Insoluble	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> Not applicable <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Zn <b>Molecular weight:</b> 65.38
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## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures. Hydrogen may evolve when in contact with water or damp air.

**Incompatibilities with other materials:** Strong acids, halogens, acids, alkalis and water.

**Hazardous decomposition products:** Zinc oxides and zinc fumes. Reacts with water, acids or alkalis to generate hydrogen gas.

## Section 11 Toxicological information

**Acute toxicity:** Data not available

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation of dust or fume may cause irritation to eyes, nose, throat, and cause a metallic taste in the mouth. May cause metal fume fever or produce flu-like symptoms.

Ingestion: May be harmful if swallowed.

Skin: May cause dermatitis.

Eyes: Contact with eyes may cause mechanical irritation.

**Signs and symptoms of exposure:** Over-heating of alloy can produce metal fumes and oxides. Over-exposure to dust and fumes may cause mouth, eye, and nose irritation.

**Additional information:** RTECS #: None assigned

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #:** Not applicable

## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Zinc	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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



## Section 1 Identification

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**CHEMTREC 24 Hour Emergency  
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 Not for drug, food or household use.

**Product** SULFUR  
**Synonyms** Sulfur Flowers ; Sulfur Flour

## Section 2 Hazards identification

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



**GHS Classification:**  
 Skin irritation (Category 2)

**GHS Label information: Hazard statement:**  
 H315: Causes skin irritation.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.  
 P302+P352: IF ON SKIN: Wash with plenty of water and soap.  
 P332+P313: If skin irritation occurs: Get medical attention.  
 P362+P364: Take off contaminated clothing and wash it before reuse.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Combustible dust  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Sulfur	7704-34-9	100%	231-722-6

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

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

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Finely dispersed particles form explosive mixtures in air.

## Section 6 Accidental release measures

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

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

**Containment and Cleanup:** Remove all sources of ignition. Sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water.

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

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

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Sulfur	None established	None established	None established

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Solid yellow powder or lumps. <b>Odor:</b> Odor of rotten eggs <b>Odor threshold:</b> Data not available. <b>pH:</b> Data not available. <b>Melting / Freezing point:</b> 116-121°C (242-251°F) <b>Boiling point:</b> 444°C (831°F) <b>Flash point:</b> 207°C (405°F) Closed Cup	<b>Evaporation rate ( = 1):</b> Not applicable <b>Flammability (solid/gas):</b> Data not available. <b>Explosion limits: Lower / Upper:</b> 3.3% / 46.0% <b>Vapor pressure (mm Hg):</b> 0 @ 138°C (280°F) <b>Vapor density (Air = 1):</b> Data not available <b>Relative density (Specific gravity):</b> 2.04-2.07 @ 21°C (67°F) <b>Solubility(ies):</b> Insoluble in water.	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> 248°C (478°F) <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> S <b>Molecular weight:</b> 32.06
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## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

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

**Incompatible materials:** Reacts violently with strong oxidizing agents. Corrosive to copper and copper alloys. Damp sulfur will corrode steel.

**Hazardous decomposition products:** Sulfur dioxide.

## Section 11 Toxicological information

**Acute toxicity:** Oral-rat LD50: >5000 mg/kg ; Inhalation-rat LC50: 0.067 mg/L/4hours ; Dermal-rabbit LD50: >2000 mg/kg

**Skin corrosion/irritation:** Skin-rabbit - Irritant.

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Burning sensation, cough, sore throat. May cause inflammation of the the nose and respiratory tract.

Ingestion: Burning sensation, diarrhea.

Skin: Redness. Prolonged or repeated contact may cause dermatitis.

Eyes: Redness, pain, blurred vision.

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

**Additional information:** RTECS #: WS4250000

## Section 12 Ecological information

**Toxicity to fish:** Brachydanio rerio (fish, fresh water), LC50 = 866 mg/L/96 hours

**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna (Crustacea), EC50 = >10,000 mg/L/24 hours

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** NA1350

**Shipping name:** Sulfur

**Hazard class:** 9

**Packing group:** III

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** No exceptions

**2020 ERG Guide #** 133

## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Sulfur	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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

## Section 1 Identification

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 Not for drug, food or household use.

**Product** COPPER METAL  
**Synonyms** Copper Metal Foil / Copper Foil

## Section 2 Hazards identification

This substance or mixture has not been classified as hazardous according to the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

**Signal word:** Not classified  
**Pictograms:** Not classified  
**Target organs:** Liver, Kidneys

**GHS Classification:** Not classified  
**GHS Label information: Hazard statement(s):** Not classified  
**Precautionary statement(s):** Not classified

**Supplemental information:**

SHARP EDGES! ABRASIVE TO SKIN. USE CARE WHEN HANDLING.  
 Do not breathe dust or fume. Do not get in eyes, on skin, or on clothing. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. Get medical attention if you feel unwell.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Copper metal	7440-50-8	100%	231-159-6

## Section 4 First aid measures

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

**INHALATION:** HARMFUL IF INHALED AS FUME. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use triclass, dry chemical fire extinguisher. Do NOT use water on fire where molten metal is present.

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

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Molten metals produce fume, vapor and/or dust that may be toxic and/or a respiratory irritant. Metal reacts with oxidizing agents.

## Section 6 Accidental release measures

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

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

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

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. Keep out of reach of children. Use with adequate ventilation. Wash thoroughly after handling.

**Handling:** Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale fumes from molten metals. Wash thoroughly after handling. Remove and wash clothing before reuse.

**Storage:** Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Copper, dusts and mists, as Cu	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

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

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

## Section 9 Physical and chemical properties

**Appearance:** Solid. Red-brown, lustrous metal. Turns green on exposure to moist air.

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** 1083°C (1981°F)

**Boiling point:** 2595°C (4703°F)

**Flash point:** Not applicable

**Evaporation rate ( = 1):** Not applicable

**Flammability (solid/gas):** Not applicable

**Explosion limits: Lower / Upper:** Not applicable

**Vapor pressure (mm Hg):** 1 mm @ 1628°C

**Vapor density (Air = 1):** Data not available

**Relative density (Specific gravity):** 8.92 @ 20°C

**Solubility(ies):** Insoluble

**Partition coefficient:** Data not available

**Auto-ignition temperature:** Not applicable

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Cu

**Molecular weight:** 63.55

## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Excessive temperatures and heat.

**Incompatibilities with other materials:** Strong oxidizers may cause a violent reaction.

**Hazardous decomposition products:** At temperatures above melting point, toxic fumes or vapors may be emitted.

## Section 11 Toxicological information

**Acute toxicity:** Data not available

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation of dust or fumes may irritate respiratory system. Symptoms include cough, headache, sore throat, shortness of breath.

Ingestion: May be harmful if swallowed. Symptoms include abdominal pain, nausea, vomiting.

Skin: May cause irritation and redness.

Eyes: Contact with eyes may cause redness and pain.

**Signs and symptoms of exposure:** Over-heating of alloy can produce metal fumes and oxides. Fumes of copper may cause metal fume fever with flu-like symptoms and skin and hair discolorization. Copper dust and fume cause irritation of the upper respiratory tract, metallic taste in the mouth, and nausea. Chronic poisoning results in Wilson's disease characterized by a hepatic cirrhosis, brain damage, demyelination, renal disease and copper deposition in the cornea.

**Additional information:** RTECS #: GL5325000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** Not applicable

**Shipping name:** Not Regulated

**Hazard class:** Not applicable

**Packing group:** Not applicable

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Not applicable

**2020 ERG Guide #:** Not applicable

## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Copper	Listed	Not listed	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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

## Section 1 Identification

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<b>Product</b>	MAGNESIUM METAL, RIBBON
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<b>Synonyms</b>	Magnesium
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## Section 2 Hazards identification

Signal word: WARNING

Pictograms: GHS02

Target organs: None known

**GHS Classification:**

Flammable solid (Category 2)

**GHS Label information: Hazard statement:**

H228: Flammable solid.

**Precautionary statement:**

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

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Combustible dust

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Magnesium	7439-95-4	99.8%	231-104-6

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Use only graphite powder, soda ash, powdered sodium chloride, or an appropriate metal-fire-extinguishing dry powder. DO NOT use water, carbon dioxide, or foam!

**Protective Actions for Fire-fighters:** In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear.

**Specific Hazards:** When heated in air to a temperature near its melting point, magnesium may ignite and burn. Dangerous in the form of dust or flakes and when exposed to flame or by violent chemical reaction with oxidizing agents. Magnesium may react with moisture or acids to evolve hydrogen gas, which is a highly dangerous fire or explosion hazard.

## Section 6 Accidental release measures

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

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

**Containment and Cleanup:** Remove all sources of ignition. Using non-sparking tools, sweep up and place in a suitable container for proper disposal. Wash spill area with soap and water.

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

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

## Section 8 Exposure controls / personal protection

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

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

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

## Section 9 Physical and chemical properties

**Appearance:** Solid. Silvery gray, metal ribbon

**Odor:** No odor.

**Odor threshold:** Data not available.

**pH:** Data not available.

**Melting / Freezing point:** 651°C (1203.8°F)

**Boiling point:** 1110°C (2030°F)

**Flash point:** 636°C (1175°F)

**Evaporation rate ( = 1):** Data not available

**Flammability (solid/gas):** Data not available.

**Explosion limits: Lower / Upper:** Data not available

**Vapor pressure (mm Hg):** 1 mm @ 621°C

**Vapor density (Air = 1):** Data not available

**Relative density (Specific gravity):** 1.74 @ 20°C

**Solubility(ies):** Negligible in water.

**Partition coefficient:** Data not available

**Auto-ignition temperature:** 510°C (950°F)

**Decomposition temperature:** Data not available.

**Viscosity:** Data not available.

**Molecular formula:** Mg

**Molecular weight:** 24.31

## Section 10 Stability and reactivity

**Chemical stability:** Stable

**Hazardous polymerization:** Will not occur.

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

**Incompatible materials:** Magnesium will react with water and acids to release hydrogen. Also hazardous with chlorine, bromine, iodine and oxidizing agents.

**Hazardous decomposition products:** Hydrogen.

## Section 11 Toxicological information

**Acute toxicity:** Data not available

**Skin corrosion/irritation:** Data not available

**Serious eye damage/irritation:** Data not available

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:**

Inhalation: Inhalation may cause cough, sore throat, shortness of breath.

Ingestion: Ingestion causes burning sensation in the mouth and may cause abdominal pain and diarrhea.

Skin: Particles imbedded in the skin may cause eruptions. Molten magnesium may cause serious skin burns.

Eyes: Contact with eyes may cause irritation and corneal scratches. Avoid direct viewing of magnesium fires as eye injury may result, use fire glasses.

**Signs and symptoms of exposure:** Exposure to magnesium oxide fume subsequent to burning can result in metal fume fever. The temporary symptoms can include fever, chills, nausea, vomiting and muscular pain. Onset of symptoms occurs 4-12 hours after exposure. Exercise appropriate procedures to minimize potential hazards.

**Additional information:** RTECS #: OM2100000

## Section 12 Ecological information

**Toxicity to fish:** No data available

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** UN1869

**Shipping name:** Magnesium

**Hazard class:** 4.1

**Packing group:** III

**Reportable Quantity:** No

**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 5 Kg

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## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Magnesium	Listed	Not listed	D001	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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



## Section 1 Identification

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<b>Product</b>	HYDROCHLORIC ACID, 1 MOLAR (1 NORMAL) SOLUTION
<b>Synonyms</b>	Muriatic Acid, Water Solution / Hydrogen Chloride, Water Solution

## Section 2 Hazards identification

**Signal word:** WARNING  
**Pictograms:** GHS05  
**Target organs:** Respiratory system, skin, eyes, lungs.



**GHS Classification:**  
 Corrosive to metals (Category 1)  
 Skin irritant (Category 3)  
 Eye irritant (Category 2B)

**GHS Label information:**  
**Hazard statement(s):**  
 H290: May be corrosive to metals.  
 H316: Causes mild skin irritation.  
 H320: Causes eye irritation.

**Precautionary statement(s):**

P234: Keep only in original container.  
 P264: Wash hands thoroughly after handling.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P332+P313: If skin irritation occurs: Get medical attention.  
 P337+P313: If eye irritation persists: Get medical attention.  
 P390: Absorb spillage to prevent material damage.  
 P406: Store in corrosive resistant container with a resistant inner liner.

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known  
 Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	96.86%	231-791-2
Hydrochloric acid	7647-01-0	3.14%	231-595-7

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

**Suitable Extinguishing Media:** Carbon dioxide, dry chemical, dry sand, alcohol foam.

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

**Specific Hazards:** During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals produce hydrogen, which is flammable and may produce explosive mixtures with air.

## Section 6 Accidental release measures

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

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

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

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

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

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Hydrogen chloride	STEL: C 2 ppm / C 2.98 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>	STEL: C 5 ppm / C 7 mg/m <sup>3</sup>

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Clear, colorless liquid. <b>Odor:</b> No odor. <b>Odor threshold:</b> No data available <b>pH:</b> No data available <b>Melting / Freezing point:</b> ~ 0°C (~ 32°F) [water] <b>Boiling point:</b> ~ 100°C (212°F) [water] <b>Flash point:</b> Not flammable. <b>Evaporation rate ( = 1):</b> < 1	<b>Flammability (solid/gas):</b> No data available <b>Explosion limits: Upper/Lower:</b> No data available <b>Vapor pressure (mm Hg):</b> 14 [water] <b>Vapor density (Air = 1):</b> 0.7 [water] <b>Relative density (Specific gravity):</b> 1.0 [water] <b>Solubility(ies):</b> Complete. <b>Partition coefficient:</b> (n-octanol / water): No data available <b>Auto-ignition temperature:</b> No data available	<b>Decomposition temperature:</b> No data available <b>Viscosity:</b> No data available <b>Molecular formula:</b> Mixture. <b>Molecular weight:</b> Mixture.
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## Section 10 Stability and reactivity

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

**Conditions to avoid:** Containers may burst when heated. Avoid contact with water.

**Incompatible materials:** Metals, bases, active metals, alkali metals, oxidizing agents, hydroxides, amines, carbonates, cyanides, sulfides, sulfites, formaldehyde.

**Hazardous decomposition products:** Hydrogen chloride gas.

## Section 11 Toxicological information

**Acute toxicity:** Data not available

**Skin corrosion/irritation:** Data not available at this dilution.

**Serious eye damage/irritation:** Data not available at this dilution.

**Respiratory or skin sensitization:** Data not available

**Germ cell mutagenicity:** Data not available

**Carcinogenicity:** Data not available

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

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

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

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

**Reproductive toxicity:** Data not available

**STOT-single exposure:** Data not available at this dilution.

**STOT-repeated exposure:** Data not available

**Aspiration hazard:** Data not available

**Potential health effects:** To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated. Specific data is not available. Exercise appropriate procedures to minimize potential hazards.

Inhalation: May be harmful if inhaled. Material may cause irritation to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

Skin: May cause irritation and/or burns.

Eyes: May cause irritation and/or burns.

**Signs and symptoms of exposure:** Data not available at this dilution.

**Additional information:** RTECS #: MW4025000 [Hydrochloric acid]

## Section 12 Ecological information

**Toxicity to fish:** LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)

**Toxicity to daphnia and other aquatic invertebrates:** No data available

**Toxicity to algae:** No data available

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**PBT and vPvB assessment:** No data available

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

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** UN1789

**Shipping name:** Hydrochloric acid

**Hazard class:** 8

**Packing group:** III

**Reportable Quantity:** 5000 lbs (2270 kg)

**Marine pollutant:** No

**Exceptions:** Limited quantity equal to or less than 5 L

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## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Hydrochloric acid	Listed	5000 lbs (2270 kg)	D002	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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

## Section 1 Identification

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**CHEMTREC 24 Hour Emergency**  
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Not for drug, food or household use.

**Product** COPPER(II) CHLORIDE, 0.1 MOLAR SOLUTION

**Synonyms** Cupric Chloride, Water Solution

## Section 2 Hazards identification

**Signal word:** WARNING

**Pictograms:** GHS07 / GHS09

**Target organs:** Respiratory system, Liver, Kidneys.

**GHS Classification:**

Acute toxicity-oral (Category 4)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Aquatic acute toxicity (Category 1)

Aquatic chronic toxicity (Category 1)

**GHS Label information: Hazard statement:**

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H410: Very toxic to aquatic life with long lasting effects.

**Precautionary statement:**

P264: Wash hands thoroughly after handling.

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

P273: Avoid release to the environment.

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

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

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

P305+P351+P338: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313: If skin irritation occurs: Get medical advice/attention.

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

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

P391: Collect spillage.

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

**Hazards not otherwise classified:**

Health hazards not otherwise classified (HHNOC) - Not Known

Physical hazards not otherwise classified (PHNOC) - Not Known

## Section 3 Composition / information on ingredients

Chemical Name	CAS #	%	EINECS
Water	7732-18-5	98.3%	231-791-2
Cupric chloride, dihydrate	10125-13-0	1.7%	231-210-2 (anhydrous)

## Section 4 First aid measures

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

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

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

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

## Section 5 Fire fighting measures

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

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

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

## Section 6 Accidental release measures

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

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

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

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

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

## Section 8 Exposure controls / personal protection

Exposure Limits:	Chemical Name	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
	Copper, dusts and mists, as Cu	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

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

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

## Section 9 Physical and chemical properties

<b>Appearance:</b> Clear, light blue liquid. <b>Odor:</b> No odor. <b>Odor threshold:</b> Data not available. <b>pH:</b> <1 <b>Melting / Freezing point:</b> Approximately 0°C (32°F) (water) <b>Boiling point:</b> Approximately 100°C (212°F) (water) <b>Flash point:</b> Data not available	<b>Evaporation rate ( Water = 1):</b> <1 <b>Flammability (solid/gas):</b> Data not available. <b>Explosion limits: Lower / Upper:</b> Data not available <b>Vapor pressure (mm Hg):</b> 14 (water) <b>Vapor density (Air = 1):</b> 0.7 (water) <b>Relative density (Specific gravity):</b> Approximately 1.0 (water) <b>Solubility(ies):</b> Complete in water.	<b>Partition coefficient:</b> Data not available <b>Auto-ignition temperature:</b> Data not available <b>Decomposition temperature:</b> Data not available. <b>Viscosity:</b> Data not available. <b>Molecular formula:</b> Mixture <b>Molecular weight:</b> Mixture
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## Section 10 Stability and reactivity

**Chemical stability:** Stable  
**Hazardous polymerization:** Will not occur.  
**Conditions to avoid:** Hygroscopic material. Avoid exposure or contact to extreme temperatures and incompatible materials.  
**Incompatible materials:** Potassium, sodium, hydrazine, nitromethane, aluminum, strong oxidizers, acetylene and sodium hypobromite.  
**Hazardous decomposition products:** Copper oxides and hydrogen chloride.

## Section 11 Toxicological information

**Acute toxicity:** [Copper chloride] Oral-rat LD50: 290 mg/kg ; Oral-human LD50: 200 mg/kg  
**Skin corrosion/irritation:** Data not available  
**Serious eye damage/irritation:** Data not available  
**Respiratory or skin sensitization:** Data not available  
**Germ cell mutagenicity:** Data not available  
**Carcinogenicity:** Data not available  
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.  
 Ca Prop 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.  
**Reproductive toxicity:** Data not available  
**STOT-single exposure:** Data not available  
**STOT-repeated exposure:** Data not available  
**Aspiration hazard:** Data not available  
**Potential health effects:**  
 Inhalation: Symptoms of over-exposure may include irritation, sore throat, shortness of breath, ulceration and perforation of the nasal septum and upper respiratory tract irritation.  
 Ingestion: May cause gastrointestinal irritation with symptoms such as nausea, vomiting and diarrhea.  
 Skin: Contact with skin may cause symptoms of itching, redness, blistering and possible scarring, dermatitis.  
 Eyes: Contact with eyes may cause redness, pain and blurred vision. Prolonged contact may cause corneal injury.  
**Signs and symptoms of exposure:** Copper salts impart a metallic taste in the mouth. Damage to the kidneys may occur in person's with Wilson's disease. High concentrations in contact with skin may result in burns. Chronic exposure may also lead to liver damage, anemia and other blood cell abnormalities.  
**Additional information: RTECS #:** GL7030000 [Copper chloride]

## Section 12 Ecological information

**Toxicity to fish:** Bluegill LC50: 0.9 mg/L/96 hours [Copper chloride]  
**Toxicity to daphnia and other aquatic invertebrates:** Daphnia magna EC50: 0.04 mg/L/48 hours [Copper chloride]  
**Toxicity to algae:** Selenastrum EC50: 0.12 mg/L/96 hours [Copper chloride]  
**Persistence and degradability:** No data available  
**Bioaccumulative potential:** No data available  
**Mobility in soil:** No data available  
**PBT and vPvB assessment:** No data available  
**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13 Disposal considerations

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

## Section 14 Transport information

**UN/NA number:** UN3082  
**Shipping name:** RQ, Environmentally hazardous substance, liquid, n.o.s., (Cupric chloride solution)  
**Hazard class:** 9  
**Packing group:** III  
**Reportable Quantity:** 10 lbs (4.54 kg)  
**Marine pollutant:** Yes  
**Exceptions:** Limited quantity equal to or less than 5 Lt. ; Reportable quantity equal to or more than 4.54 Kg  
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## Section 15 Regulatory information

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

Component	TSCA	CERLCA (RQ)	RCRA code	DSL	NDSL	CA Prop 65
Cupric chloride (anhydrous)	Listed	10 lbs (4.54 kg)	Not listed	Listed	Not listed	This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

## Section 16 Other information

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