

## ZINC METAL POWDER

## Material Safety Data Sheet

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Mallinckrodt Chemical Inc.

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Emergency Telephone Number  
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Effective Date: 01-16-94 Supersedes 04-06-89

## PRODUCT IDENTIFICATION:

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Synonyms: Powdered zinc; blue powder

Formula CAS No.: 7440-66-6

Molecular Weight: 65.37

Hazardous Ingredients: Zinc

Chemical Formula: Zn

## PRECAUTIONARY MEASURES

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WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR. WATER REACTIVE.Avoid breathing dust.  
Keep away from heat and flame.  
Keep container closed.  
Use with adequate ventilation.  
Wash thoroughly after handling.

## EMERGENCY FIRST AID

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If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.  
SEE SECTION 5.

## Physical Data

## SECTION 1

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Appearance: Gray or bluish-gray powder.

Odor: Odorless.

Solubility: Insoluble in water.

Boiling Point: 907 C (1665 F)

Vapor Density (Air=1): No information found.

Melting Point: 419 C (787 F)

Vapor Pressure (mm Hg): 1 @ 487 C (909 F)

Specific Gravity: 7.14

Evaporation Rate: No information found.

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 1  
Other: Water reactive

## Fire and Explosion

## SECTION 2

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Information-----  
Fire:

Zinc powder is not pyrophoric but will burn in air at elevated temperatures. Autoignition temperatures are approximately 680 C (dust cloud) or 460 C (layer). Bulk dust in damp state may heat spontaneously and ignite on exposure to air.

Releases flammable hydrogen gas upon contact with acids or alkali hydroxides.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Smother with a suitable dry powder (sodium chloride, magnesium oxide).

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Reactivity Data

SECTION 3

Stability:

Stable under ordinary conditions of use and storage. Moist zinc dust can react exothermically and ignite spontaneously in air.

Hazardous Decomposition Products:

Hydrogen in moist air, zinc oxide with oxygen at high temperature. Zinc metal, when melted, produces zinc vapor which oxidizes and condenses in air to form zinc fume.

Hazardous Polymerization:

This substance does not polymerize.

Incompatibilities:

Zinc powder can react violently with sulfur and halogens. Dangerous or potentially dangerous with strong oxidizing agents, lower molecular weight chlorinated hydrocarbons, strong acids and alkalies.

Leak/Spill Disposal Information

SECTION 4

Remove all sources of ignition and provide mild ventilation in area of spill. Substance may be pyrophoric and self-ignite. Clean-up personnel require protective clothing, goggles and dust/mist respirators. Sweep or vacuum up the spill in a manner that does not disperse zinc powder in the air and place the zinc in a closed container for recovery or disposal. Dispose in a RCRA approved facility.

Reportable Quantity (RQ) (CWA/CERCLA) : 1000 lbs.

Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

A. Exposure/Health Effects

Inhalation:

No adverse effects expected but dust may cause mechanical irritation. The effects may be expected to resemble those of inhaling an inert dust; possible difficulty in breathing, sneezing, coughing. When heated, the fumes are highly toxic and may cause fume fever.

Ingestion:

Extremely large oral dosages may produce gastrointestinal disturbances, due both to mechanical effects and the possibility of reaction with gastric juice to produce zinc chloride. Pain, stomach cramps and nausea could occur in aggravated cases.

Skin Contact:

May cause irritation.

Eye Contact: May cause irritation.

Chronic Exposure: No adverse health effects expected.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

#### B. FIRST AID

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Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Exposure: Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

#### C. TOXICITY (RTECS, 1993)

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Irritation skin, human: 300 ug/3D-I mild; investigated as a mutagen.

#### Occupational Control Measures SECTION 6

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Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 5 mg/m3 (TWA), 10 mg/m3 (STEL) for zinc oxide fume  
-ACGIH Threshold Limit Value (TLV): 5 mg/m3 (TWA), 10 mg/m3 (STEL) for zinc oxide fume.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded, a dust/mist respirator may be worn up to ten times the TLV. Consult respirator supplier for details.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Use chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

#### Storage and Special Information SECTION 7

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Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities.

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Mallinckrodt provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving the information must exercise their independent judgment in determining its



## REGULATORY STATUS

Any copying or redistribution of the MSDS must include a copy of this addendum

|       |         |       |          |          |
|-------|---------|-------|----------|----------|
| Acute | Chronic | Fire  | Pressure | Reactive |
| ----- | -----   | ----- | -----    | -----    |
| X     |         | X     |          | X        |

| Product or Components<br>of Product:<br>----- | SARA EHS |     | SARA Sec. 313<br>Chemicals |          | CERCLA  | RCRA   |
|---|----------|-----|----------------------------|----------|---------|--------|
|   | Sec. 302 |     | Name                       | Chemical | Sec.103 | Sec.   |
|   | RQ       | TPQ | List                       | Category | RQ lbs  | 261.33 |
| -----   | ---      | --- | ----                       | -----    | -----   | -----  |
| ZINC METAL POWDER<br>(7440-66-6)              | No       | No  | Yes                        | No       | No      | No     |

SARA Section 302 EHS TPQ:  
Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (\*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

CERCLA Sec. 103:  
Comprehensive Environmental Response, Compensation and Liability Act (Superfund)  
Releases to air, land or water of these hazardous substances which exceed the  
Reportable Quantity (RQ) must be reported to the National Response Center,  
(800-424-8802); Listed at 40 CFR 302.4

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