

**MATERIAL SAFETY DATA SHEET
FOR
THORN SMITH LABORATORIES
ANALYZED QUANTITATIVE UNKNOWNNS**

Zinc Ore for Zn
Catalog Number 80-1715

Manufacturer: Auric Enterprises, Inc.
d/b/a Thorn Smith Laboratories
Address: 7755 Narrow Gauge Road
Beulah, MI 49617
Phone Number: 231-882-4672
MSDS Number: TSL-030
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SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS - Chemical Name & Common Names
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Zinc Metal Powder

Formula: Zn
CAS No.: 7440-66-6
Common Synonyms: Powdered zinc; blue powder
Molecular Weight: 65.37
OSHA PEL: 5 mg/m³ TWA, 10 mg/m³ STEL for zinc fume oxide fume
ACGIH TLV: N/E
OTHER LIMITS: N/A

Limestone Standard

Formula: Primarily carbonates of calcium, magnesium. Non-hazardous.
CAS No.: N/A
OSHA PEL: TWA 10 mg/m³
ACGIH TLV: N/E
OTHER LIMITS: N/A

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 907° C (1665° F) (Zn); N/A Limestone
Specific Gravity (H₂O=1): 7.14 (Zn); N/A Limestone
Vapor Pressure (mm Hg and Temperature): 1 @ 487° C (909° F) (Zn)
Melting Point: 419° C (787° F) (Zn)
Vapor Density (Air=1): N/A

Evaporation Rate (-1): N/A

Solubility in Water: N/A

Water Reactive: N/A

Appearance and Odor: Gray or bluish-gray powder. Odorless.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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.

Extinguisher Media: Smother with a suitable dry powder (sodium chloride, magnesium oxide (Zinc).

Special Fire Fighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.

Unusual Fire and Explosion Hazards: Releases flammable hydrogen gas upon contact with acids or alkali hydroxides.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable Unstable

Conditions to Avoid: No information found.

Incompatibility (Materials to Avoid): Zinc powder can react violently with sulfur and halogens. Dangerous or potentially dangerous with strong oxidizing agents, lower molecular weight chlorinated hydrocarbons, strong acids or alkalies.

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: May Occur Will Not Occur

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:

Inhalation Ingestion Skin Contact Eye Contact Not Hazardous

CARCINOGEN LISTED IN:

NTP OSHA IARC Monograph Not Listed

TOXICITY: No information found relating to normal routes of occupational exposure.

HEALTH HAZARDS - Acute:

Skin Contact: May cause irritation.

Eye Contact: May cause irritation.

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

Ingestion: Extremely large oral doses may produce gastrointestinal disturbances, due both to mech-

anical effects and the possibility of reaction with gastric juice to produce zinc chloride. Pain, stomach cramps and nausea could occur in aggravated cases.

HEALTH HAZARDS - Chronic: No information found.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: Persons with pre-existing skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation, and support if necessary.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally.

Ingestion: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

Inhalation: If a person breathes in large amounts, move exposed person to fresh air. Get medical attention for any breathing difficulty.

Skin Contact: Remove any contaminated clothing. Wipe off excess from skin. Immediately wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Acute: Yes Chronic: No Flammability: Yes Pressure: No Reactivity: Yes

Extremely Hazardous Substance: No

CERCLA Hazardous Substance: 1000 lbs.

SARA 313 Toxic Chemicals: Yes

TSCA Inventory: No

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type): For conditions where exposure to the dust is apparent, a dust/mist respirator may be worn.. (NIOSH approved)

Protective Gloves: Wear rubber gloves.

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

VENTILATION TO BE USED: A local exhaust system, which captures the contaminant at its source, is recommended to prevent dispersion of the contaminant into the workroom air.

_____ Other(Specify)

Other Protective Clothing and Equipment: Wear clean body-covering clothing.

Hygienic Work Practices: 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.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & LEAK/USE PROCEDURES

Steps to be taken if material is spilled or released: 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.

Precautions to be taken in handling and storage: Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards: No information available.

NFPA Rating: Health: **1** Flammability: **1** Reactivity: **0** Other: **Water Reactive**.

HMIS Rating: No information available.

SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

International (T.M.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

AIR (I.C.A.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

NOTE:

Per section 172.101 of 49CFR Chapter 1, this material is a mixture of a hazardous material and (Zinc Metal Powder) and a non-hazardous material (Limestone); and can be shipped as N.O.S. (non-regulated). Actual mixture quantities are identified on the analysis sheet which accompanies every order.

The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and assume no liability resulting from its use. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.