

8828

SB15260

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MATERIAL SAFETY DATA SHEET

Z I N C

REPRESENTED BY
Kraft Chemical Company

SION



1975 North Hawthorne Avenue
Melrose Park, Illinois 60160
1 (708) 345-5200

IDENTITY

TRADE NAMES	CHEMICAL NAME	FORMULA
Zinc	Zinc	Zn
Zinc anode, chop bar and waffle		

SECTION I

MANUFACTURER'S NAME Imperial Smelting Corporation	EMERGENCY TELEPHONE NUMBER (312)264-5900 (800)424-9300 - CHEMTREC
ADDRESS 1031 East 103rd Street Chicago, IL 60628	TELEPHONE NUMBER FOR INFORMATION (312)264-5900 Telefax: (312)264-5910

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

MATERIAL	FORMULA	PERCENT BY WEIGHT	CAS NUMBER	HUMAN CARCINOGEN?	FORM	OSHA ^a 8-hr PEL mg/m ³	OSHA 8-hr TWA (15-min STEL) mg/m ³	ACGIH 8-hr TLV (15-min STEL) mg/m ³
Zinc	Zn	99.9+	7440-66-6	No	All	---	---	---
Zinc oxide	ZnO	^d	1314-13-2	No	Dust Fume	15 ^b 5	10 ^c 5(10)	10 5(10)

Notes:
^aFor dusts without an explicit OSHA PEL, a nuisance dust PEL applies: 15 mg/m³ total dust, 5 mg/m³ respirable dust.
^b15 mg/m³ total dust, 5 mg/m³ respirable dust.
^c10 mg/m³ total dust, 5 mg/m³ respirable dust.
^dProcessing or oxidation of zinc may generate zinc oxide. See Section VI.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOTTING POINT	1,663°F (906°C)	SPECIFIC GRAVITY (H ₂ O=1)	7.13
VAPOR PRESSURE (mm Hg)	Not applicable	MELTING POINT	787°F (419°C)
VAPOR DENSITY (Air=1)	Not applicable	EVAPORATION RATE (Butyl acetate=1)	Not applicable
SOLUBILITY IN WATER (at 20°C)	Insoluble		
APPEARANCE AND ODOR	Shiny silver-gray, odorless metallic solid		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable	Nonflammable	Not applicable	Not applicable

Zinc will not burn in the solid state under ordinary fire conditions. Like other metallic and organic dust and fine powder, zinc dust and powder may burn under some conditions. Fire or explosion may occur if material in the form of dust or powder is exposed to heat, flames or sparks or contact with powerful oxidizers.

EXTINGUISHING MEDIA
 Use carbon dioxide (CO₂), dry chemical or dry sand. DO NOT USE WATER OR MOIST SAND.

Z I N C

SPECIAL FIRE FIGHTING PROCEDURES

Fire fighters should wear full body protective clothing and full facepiece, self-contained breathing apparatus operated in a positive-pressure mode. Confine metal powder or dust fire, avoid spreading.

UNUSUAL FIRE AND EXPLOSION HAZARDS

NEVER PUT WATER ON MOLTEN METAL - IT WILL EXPLODE. Molten metals produce fume, vapor and/or dust that may be toxic and/or respiratory irritants. The metal or its dust can react vigorously with strong oxidizing agents, which can liberate hydrogen gas which may be explosive.

SECTION V - REACTIVITY DATA

STABILITY

Stable at room temperature.

INCOMPATIBILITY (MATERIALS TO AVOID)

NEVER PUT WATER ON MOLTEN METAL - IT WILL EXPLODE.

Zinc is slowly attacked by sulfuric acid (H_2SO_4) or hydrochloric acid (HCl), oxidizing agents or metal ions accelerate the process. Reacts slowly with ammonia water and acetic acid, rapidly with nitric acid (HNO_3). An explosion hazard is created if zinc dust reacts with acids, cadmium, carbon disulfide (CS_2), chlorates, chlorine (Cl_2), chlorine trifluoride (ClF_3), chromic oxide (CrO_3), (ethyl acetoacetate + tribromoneopentyl alcohol), fluorine (F_2), hydroxylamine, manganese chloride ($MnCl_2$), nitrates, peroxides, selenium, sulfur, tellurium or water.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS

At temperatures above the melting point, zinc oxide fumes may be evolved. Reaction with strong oxidizers liberates hydrogen gas which may be explosive.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION VI - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY

INHALATION? Yes

SKIN? No

INGESTION? Yes

HEALTH HAZARDS (ACUTE AND CHRONIC)

Inhalation

Cutting, melting, welding, soldering or mechanical processing may produce dusts or fumes containing zinc or zinc oxide. Breathing these dusts or fumes may present potentially significant health hazards.

Overexposure to dusts and fumes containing zinc or zinc oxide may cause nose irritation and lung changes in workers, potentially leading to pulmonary diseases. Zinc oxide fumes may cause metal fume fever with flu-like symptoms.

Skin

Dusts or fumes containing zinc may cause skin irritation.

Eyes

Dusts or fumes containing zinc may cause eye irritation.

Ingestion

Ingestion of significant amounts of material is unlikely.

Unusual Chronic Toxicity

None reported.

CARCINOGENICITY: NTP? No

IARC MONOGRAPHS? No

OSHA REGULATED? No

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure to metal dust or fume may cause mucous membrane irritation and lung changes in workers, potentially leading to pulmonary diseases.

Zinc oxide fumes may result in sweet taste, throat dryness, cough, generalized aching, nausea or vomiting. Metal fume fever may result in chills and fever, profuse sweating, and weakness.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pulmonary and cardiac diseases for zinc oxide.

EMERGENCY AND FIRST AID PROCEDURES

Eyes

Flush with copious amount of water to remove particles. Contact a Physician.

Skin

Vacuum off excess dust. Wash area with plenty of soap and water. Skin cuts and abrasion can be treated with standard first aid. If material is molten, treat as a burn.

Inhalation

Remove to fresh air. Contact a Physician.

Ingestion

Ingestion of significant amounts of material is unlikely. If large quantities of material are ingested, induce vomiting in conscious individual and contact a Physician.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

No special precautions are necessary for spills of bulk material. Wear gloves to prevent metal cuts.

If quantities of dust are spilled, remove by vacuuming or wet sweeping to prevent heavy concentrations of airborne dust. Do not use compressed air for cleaning. Cleanup personnel should wear approved respirators and protective clothing. Place all collected metal or particulates in a labeled container.

Molten metal spills can cause concrete to explode. Spilled molten metal can be reclaimed for reuse.

CERCLA Reportable Quantity (RQ)

1000 pounds. (Only applies to material smaller than 100 micrometers in diameter.)

WASTE DISPOSAL METHOD

Sell waste material for scrap. In the United States, this product must be disposed of in accordance with applicable federal, state and local solid waste labeling, shipping and disposal laws and regulations.

RCRA Hazardous Waste Number

None.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Use good housekeeping practices to prevent accumulations of dust and keep airborne dust concentrations at a minimum. Avoid breathing dust or fumes.

Store metal in a dry area away from incompatible materials. Avoid storage near hydrogen peroxide. Keep dust away from sources of ignition.

Preheat metal when required to evaporate surface moisture prior to melting. Ice, snow, grease, oil or moisture can cause explosions. Remove these contaminants before charging ingot to melting furnace.

OTHER PRECAUTIONS

Handling molten metal presents special hazards.

SARA Title III Threshold Planning Quantity (TPQ)

None.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION

Employees may wear NIOSH or MSBA approved respirators as specified by an Industrial Hygienist or qualified Safety Engineer for protection against airborne dusts or fumes.

VENTILATION

Local exhaust ventilation is required for melting, grinding, screening, soldering or other operations where dust or fumes are generated. Use general and local exhaust ventilation to keep airborne concentrations of dust or fume below the OSHA PEL and TWA shown in Section II.

PROTECTIVE GLOVES

Advisable to avoid cuts and skin abrasions. Gloves are recommended during grinding or other operations with significant skin contact. Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis.

EYE PROTECTION

Approved safety glasses or goggles should be worn when exposed to dusty or hot material. Face shields should be worn around hot metal. Safety eyewash stations should be provided near work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Full protective clothing should be worn by workers exposed to heavy concentrations of dust or high heat and during alloying operations to prevent injury from molten metal splashing, spilling, etc.

WORK/HYGIENIC PRACTICES

Practice good personal hygiene procedures. Do not eat, drink or use tobacco products in work areas. Wash thoroughly after skin contact and before eating, drinking, use of tobacco products or using restrooms. Take a shower and change clothes at the end of the shift. All protective and contaminated clothing must be left at the plant. Do not use compressed air for blowing dust off of clothes. Launder all other work clothing separately from household laundry.

Pre-employment medical evaluations should be provided. Attention should be directed to skin, eyes, respiratory