MATERIAL SAFETY DATA SHEET
Zinc, Metal Powder

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	:	Zinc, Metal Powder
CAS	:	7440-66-6
Chemical formula	:	Zn
Molecular weight	:	147
Synonym		Zinc Metal, Powder, 200 Mesh

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SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

Composition:

Chemical Name	CAS #	% weight
Zinc, Metal Powder	7440-66-6	100

Toxicological Data on Ingredients: Zinc, Metal Powder LD50: Not available. LC50: Not available.

SECTION 3: HAZARDS IDENTIFICATION

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

SECTION 4: FIRST AID MEASURES

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact: Not available.
Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. Seek medical attention.
Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion: Not available.

SECTION 5: FIRE AND EXPLOSION DATA

Flammability of the Product: Flammable.
Auto-Ignition Temperature: 460°C (860°F)
Flash Points: Not available.
Flammable Limits: Not available.
Products of Combustion: Some metallic oxides.
Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Flammable in presence of oxidizing materials, of acids. Slightly flammable to flammable in presence of moisture. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of moisture.
Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards:
Zinc dust ignites in contact with liquid seleninyl bromide. Zinc powder and carbon disulfide react with incandescence. Warm Zinc powder incandesces with fluorine. A mixture of zinc powder dust with ammonium nitrate or mixed nitrate and chloride ignites when moistened. Zinc + NaOH causes ignition. Oxidation of zinc by potassium proceeds with incandescence. Residues from zinc dust /acetic acid reduction operations may ignite after long delay if discarded into waste bins with paper. Incandescent reaction when Zinc and Arsenic or Tellurium, or Selenium are combined. When hydrazine mononitrate is heated in contact with zinc, a flamming decomposition occurs at temperatures a little above its melting point. Contact with acids and alkali hydroxides (sodium hydroxide, postasium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas. Reactive with water and may produce flammable gases on contact with water. May ignite on contact with water or moist air.
Special Remarks on Explosion Hazards:
Material in powder form, capable of creating a dust explosion when mixed with air. Hydroxylamine is reduced when heated with zinc dust. Sometimes the mixture merely ignites, other times it explodes. Zinc powder reacts explosively when heated with Manganese Chloride. Powdered Zinc can decompose performic acid violently, causing an explosion if heated. Interaction on heating powdered zinc and sulfur is considered to be too violent.

SECTION 6: ACCIDENTAL RELEASES MEASURE

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill: Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

SECTION 7: HANDLING AND STORAGE

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.
Storage:
MOISTURE SENSITIVE. Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction. Do not store above 23°C (73.4°F).

SECTION 8: PERSONAL PROTECTION

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits: Not available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Solid. (Powdered solid. Metal solid.)
Odor: Odorless.
Taste: Tasteless.

Molecular Weight: 65.39 g/mole
Color: Bluish-white. Grey.
pH (1% soln/water): Not applicable.
Boiling Point: 907°C (1664.6°F)
Melting Point: 419°C (786.2°F)
Critical Temperature: Not available.
Specific Gravity: 7.14 (Water = 1)
Vapor Pressure: Not applicable.
Vapor Density: Not available.
Volatility: Not available.
Odor Threshold: Not available.
Water/Oil Dist. Coeff.: Not available.
Ionicity (in Water): Not available.
Dispersion Properties: Not available.
Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Excess heat, excess dust generation, ingnition sources, moisture, incompatible materials
Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product reacts violently with water to emit flammable but non toxic gases.
Corrosivity: Non-corrosive in presence of glass.
Special Remarks on Reactivity:
MOISTURE SENSITIVE. Incompatible with acids, halogenated hydrocarbons, NH4NO3, barium oxide, Ba(NO3)2, Cadmium, CS2, chlorates, Cl2, CrO3, F2, Hydroxylamine, Pb(N3)2, MnCl2, HNO3, performic acid, KClO3, KNO3, N2O2, Selenium, NaClO3, Na2O2, Sulfur, Te, water, (NH4)2S, As2O3, CS2, CaCl2, chlorinated rubber, catalytic metals, halocarbons, onitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides. Seleninyl bromide, HCl, H2SO4, (Mg +Ba(NO3)2 +BaO2), (ethyl acetoacetate +tribromoneopentyl alcohol. Contact with Alkali Hydroxides (Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water cause a violent reaction with evolution of steam and zinc oxide. A violent reaction or flamming is likely in the reaction of chromic anhydride and zinc dust. May react vigorously or explosive with water
Special Remarks on Corrosivity: Not available.
Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation. Ingestion.
Toxicity to Animals: LD50: Not available. LC50: Not available.
Chronic Effects on Humans: Not available.
Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: Not available.
Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia, and weight loss. Eyes: May cause eye irritation. Ingestion: May be harmul if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, malaise, loss of appettite, abdominal pain fever, and chills. May affect behavior/central nervous system and autonomic nervous system with ataxia, lethargy, and staggering gait, mild derrangement in cerebellar function, lightheadness, dizzness, irritability, muscular stiffness, and pain. May also affect blood. Inhalation: Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headached fever, maliase, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
BOD5 and COD: Not available.
Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Classification: CLASS 4.2: Spontaneously combustible substance. CLASS 4.3: Dangerous when wet material.
Identification: : Zinc Dust/Powder UN No: 1436 PG: III
Special Provisions for Transport: Not available.

SECTION 15: OTHER REGULATORY INFORMATION

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. Connecticut hazardous material survey.: Zinc, Metal Powder Illinois toxic substances disclosure to employee act: Zinc, Metal Powder Illinois chemical safety act: Zinc, Metal Powder New York release reporting list: Zinc, Metal Powder Rhode Island RTK hazardous substances: Zinc, Metal Powder Pennsylvania RTK: Zinc, Metal Powder Florida: Zinc, Metal Powder Michigan critical material: Zinc, Metal Powder Massachusetts RTK: Zinc, Metal Powder New Jersey: Zinc, Metal Powder New Jersey spill list: Zinc, Metal Powder Louisiana spill reporting: Zinc, Metal Powder California Director's List of Hazardous Substances: Zinc, Metal Powder TSCA 8(b) inventory: Zinc, Metal Powder TSCA 8(a) IUR: Zinc, Metal Powder SARA 313 toxic chemical notification and release reporting: Zinc, Metal Powder CERCLA: Hazardous substances.: Zinc, Metal Powder: 1000 lbs. (453.6 kg)
Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:
WHMIS (Canada): CLASS B-6: Reactive and very flammable material.
DSCL (EEC):
R15- Contact with water liberates extremely flammable gases.
R17- Spontaneously flammable in air.
S7/8- Keep container tightly closed and dry.
S43- In case of fire, use [***]
HMIS (U.S.A.):
Health Hazard: 1
Fire Hazard: 3
Reactivity: 1
Personal Protection: E
National Fire Protection Association (U.S.A.):
Health: 0
Flammability: 3
Reactivity: 1
Specific hazard:
Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

SECTION 16: OTHER INFORMATION

Product Use:

Laboratory Reagent.

Disclaimer:

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