



Material Safety Data Sheet

Product Information

Zinc CAS - 7440-66-6

Physical Data

Ingredient	Molar weight	Specific Gravity	Melting Point (.c)	Boiling point (.c)	Solubility in H2O (g/100ml)
Zinc	65.39 g/mole	n/a	419	907	n/a

Bluish-grey solid metal.

Fire or Explosion Hazard

Flammable, auto-ignition temperature 440.c.  
Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials, of acids, of alkalis, of moisture.  
Non-flammable in presence of shocks.

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, auto ignition or explosion.

Special Remarks on Fire Hazards:

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 flaming decomposition occurs at temperatures a little above its melting point.

Contact with acids and alkali hydroxides (sodium hydroxide, potassium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas.

Zinc foil ignites if traces of moisture are present.

### **Hazardous Identification**

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

### **First Aid Measures**

#### **Eye contact:**

Check 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.

#### **Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get 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.

### **Toxicological Information**

Routes of entry:

Inhalation, Ingestion.

Toxic Effects on humans:

Slightly hazardous in case of skin contact (irritant).

Ingestion may be harmful if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhoea, loss of appetite, malaise, abdominal pain, fever and chills. May affect behaviour/central nervous system and autonomic nervous system with lethargy, mild derangement, cerebella function, light headiness, dizziness, muscular stiffness, and pain. May also affect blood.

**Stability and Reactive Information**

Stability:

The product is stable.

Conditions of Instability:

Excess heat, incompatible materials, moisture

Incompatibility with various substances:

Reactive with oxidizing agents, acids, alkalis.

Slightly reactive to reactive with moisture.

The product may react violently with water to emit flammable but non toxic gases.

Special Remarks on Reactivity:

Incompatible with acids, halogenated hydrocarbons,  $\text{NH}_4\text{NO}_3$ , barium oxide,  $\text{Ba}(\text{NO}_3)_2$ , Cadmium,  $\text{CS}_2$ , chlorates,  $\text{Cl}_2$ ,  $\text{CrO}_3$ ,  $\text{F}_2$ , Hydroxylamine,  $\text{Pb}(\text{N}_3)_2$ ,  $\text{MnCl}_2$ ,  $\text{HNO}_3$ , performic acid,  $\text{KClO}_3$ ,  $\text{KNO}_3$ ,  $\text{N}_2\text{O}_2$ , Selenium,  $\text{NaClO}_3$ ,  $\text{Na}_2\text{O}_2$ , Sulfur, Te, water,  $(\text{NH}_4)_2\text{S}$ ,  $\text{As}_2\text{O}_3$ ,  $\text{CS}_2$ ,  $\text{CaCl}_2$ , chlorinated rubber, catalytic metals, halocarbons, o-nitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides, seleninyl bromide,  $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$ ,  $(\text{Mg} + \text{Ba}(\text{NO}_3)_2 + \text{BaO}_2)$ , (ethyl acetoacetate +tribromoneopentyl alcohol.

Contact with Alkali Hydroxides(Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen.

Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide.

## **Ecological Information**

### **Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

## **Disposable Considerations**

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

## **Transport Information**

Not regulated for either air or ground shipments.

## **Handling and Storage**

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.

## **Preventative Measures**

### **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.

### **Prepared by:**

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**Note: Total Global Steel Ltd believes that the information in this Material Safety Data Sheet is accurate. However, Total Global Steel Ltd makes no express or implied warranty as to the accuracy of such information and expressly disclaims any liability resulting from reliance on such information.**