



**MATERIAL SAFETY DATA SHEET**  
COMPLIES WITH 29 CFR 1910.1200.  
OSHA HAZARD COMMUNICATION RULE

**DATE OF LAST REVISION: 05-18-07**

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## CHEMICAL IDENTITY

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LABEL IDENTITY	<b>ZINC</b>
CHEMICAL NAME/SYNONYMS	<b>ZINC</b>
FORMULA	<b>Zn</b>
CHEMICAL FAMILY	<b>ZINC</b>
CAS REGISTRY NUMBER	<b>7440-66-6</b>
HAZARDOUS INGREDIENTS	<b>ZINC</b>
%: <b>NA</b>	ACGIH/TLV: <b>TWA 5.0mg/m3</b> OSHA/PEL: <b>TWA 5.0mg/m3</b>

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## PHYSICAL AND CHEMICAL PROPERTIES

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COLOR, FORM AND ODOR	<b>Gray powder, odorless</b>
BOILING POINT	<b>908°C</b>
DENSITY (gm/cc)	<b>NA</b>
VAPOR PRESSURE @ 20°	<b>NA</b>
% VOLATILE BY VOLUME (%)	<b>NA</b>
REACTION WITH WATER	<b>NA</b>
EVAPORATION RATE (H20=1)	<b>NA</b>
SOLUBILITY IN WATER	<b>Insoluble</b>
MELTING POINT	<b>419.8°C</b>

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## FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT	<b>Flammable solid</b>
AUTOIGNITION TEMPERATURE (° C)	<b>NA</b>
FLAMMABILITY	<b>NA</b>
EXTINGUISHING MEDIA	<b>Class D fire extinguishing media only</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>DO NOT USE WATER!!!, wear SCBA, violent reaction with water, may explode</b>
UNUSUAL FIRE & EXPLOSION HAZARDS	<b>Dust explosion hazard</b>



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### HEALTH HAZARD INFORMATION

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TOXICITY DATA                      skn-hmn 200ug/3D-l: MLD  
   ihl-hmn TCLO: 124mg/m3/50M: PUL, SKN  
   \*(for more: SEE ATTACHED SHEET)\*

HMIS RATING:  
HEALTH: **na**    FLAMMABILITY: **na**    REACTIVITY: **na**    PERSONAL PROTECTION: **na**

ROUTES OF ENTRY                      INHALATION:                      **Yes**  
   SKIN:                                      **Yes**  
   INGESTION:                              **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Pre-existing lung disease**  
EFFECTS OF OVEREXPOSURE (acute and chronic):  
INHALATION: **inhalation of freshly formed fumes may produce characteristic systems known as metal fume fever or zinc shakes. Only the freshly formed fume is potent.**  
DERMAL/EYE: **mild (transient)**  
OTHER: **chronic overexposure to Zn will produce chromosomal anomalies in leukocytes. Arthritic lameness and inflammation of the gastrointestinal tract reported in animal studies. May cause dermatitis.**

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CARCINOGENICITY: **na**    NTP: **na**    IARC MONOGRAPHS: **na**    OSHA REGULATE: **na**

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EMERGENCY FIRST AID PROCEDURES:  
INGESTION: **seek medical attention, wash mouth out with water**  
INHALATION: **remove to fresh air, if not breathing, give artificial respiration, seek medical attention, if breathing is difficult give oxygen**  
SKIN CONTACT: **flush with soap and water**  
EYE CONTACT: **flush eyes with plenty of water for at least 15 minutes**

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### REACTIVITY DATA

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STABILITY	<b>Stable</b>
CONDITIONS CONTRIBUTING TO UNSTABILITY	<b>NA</b>
INCOMPATIBILITY (MATERIALS TO AVOID)	<b>strong acids, strong alkalis, air and moisture sensitive, halogens, amines, cadmium, chlorinated solvents, sulfur, catalytic metals, non-metals, oxidants.</b>
HAZARDOUS DECOMPOSITION PRODUCTS	<b>ZnO</b>
HAZARDOUD POLYMERZATION	<b>NA</b>
CONDITIONS TO AVOID	<b>ignition sources</b>



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### SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Sweep or scoop up and remove, avoid raising dust. Evacuate area, shut off all sources of ignition, wear SCBA, ventilate area and wash spill site after material pickup is complete.**

#### WASTE DISPOSAL METHOD:

**Consult federal, state and local regulations for proper disposal procedure: This product contains chemical (s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-know Act of 1986 and 40 CFR 372.**

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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION	<b>filter, dust mist and fume</b>
VENTILATION/ALWAYS USE BELOW	<b>maintain exposure below permissible exposure limits</b>
SPECIAL	<b>NA</b>
OTHER	<b>NA</b>
PROTECTIVE GLOVES	<b>Natural rubber</b>
EYE PROTECTION	<b>Goggles</b>
OTHER PROTECTIVE EQUIPMENT	<b>Wear protective clothing to prevent contamination of skin and clothes</b>

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### SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: **wash thoroughly after handling, don't get in eyes, on skin or on clothing. Don't breathe dust, vapor, mist, gas. Keep away from heat, sparks and open flames. Store in tightly closed containers, air and moisture sensitive.**

TRANSPORTATION REQUIREMENTS	DOT CLASS:	<b>FLAMMABLE SOLID</b>
	UN NUMBER:	<b>NA</b>
	IMCO CLASS:	<b>NA</b>
	OTHER:	<b>NA</b>

PRECAUTIONARY LABELING **NONE**

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THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

**NA= NOT APPLICABLE**

**ND= NO DATA FOUND**

**NR=NOT RECORDED**



**ATTACHED SHEET FOR: ZINC**

**TOXICITY DATA (CONTINUED)**

**Human systemic effects by ingestion: cough, sypnea and sweating. Inhalation may cause sweet taste, throat dryness, weakness, generalized aches, chills, fever, nausea and vomiting. Exposure can cause chest pain and edema which may be fatal. Inhalation of freshly formed fumes may produce characteristic systems known as metal fume fever or zinc shakes. Only the freshly formed fume is potent.**