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**MSDS FOR ZINC METAL: SPECIAL HIGH GRADE, HIGH GRADE****ZC-M002**

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**SECTION I - GENERAL INFORMATION****NAME:** ZINC METAL**MANUFACTURER:**  
HORSEHEAD CORPORATION  
300 Frankfort Road  
Monaca, PA 15061  
724-774-1020**TRANSPORTATION****CHEMTREC:** 800-424-9300**EMERGENCY:****TRADE NAME AND SYNONYMS:** Special high grade or high grade zinc**CHEMICAL FAMILY:** Nonferrous Heavy Metal**CAS NO.:** 7440-66-6**FORMULA:** Zn**DOT HAZARD CLASS:** Not listed**UN NO.:** NAIF\***NA NO.:** NAIF\***ISSUE DATE:** 2/25/88**REVISION DATE:** 4/6/12

\* NAIF - No applicable information found.

**SECTION II - INGREDIENTS**

<u>MATERIAL</u>	<u>CAS NO.</u>	<u>%</u>
ZINC	7440-66-6	99.9

**SECTION III PHYSICAL DATA****BOILING POINT (760 MM HG):** 1665° F**MELTING POINT:** 788° F**SPECIFIC GRAVITY:** 7.12**EVAPORATION RATE (=1):** N/A**VAPOR DENSITY (air = 1):** N/A**SOLUBILITY IN WATER:** Negligible**PERCENT VOLATILE BY VOLUME (%):** N/A**VAPOR PRESSURE AT 909° F:** 0.13kPa**APPEARANCE AND ODOR:** Silver-white, or Bluish-white metal

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

Zinc does not introduce a serious fire hazard in sheets, castings, or other massive forms because of the difficulty of ignition, although once ignited (above 1665° F), large pieces burn vigorously.

**FLASH POINT (METHOD USED):** N/A

**NFPA FIRE RATING**

<b>FLAMMABLE LIMITS:</b>	LEL: N/A	HEALTH	0
	UEL: N/A	FLAMMABILITY	0
		REACTIVITY	0

**EXTINGUISHING MEDIA:** Smother and cool with a suitable dry extinguishing agent (class D fires) such as dry powder (Ansul Met-L-X), zinc oxide or dry sand. Water should not be used; however wherever it is necessary to cool exposures, extreme caution should be taken to prevent contact with molten zinc or burning zinc products.

**SPECIAL FIRE FIGHTING PROCEDURES:** Use NIOSH/MSHA approved self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Heating of metal beyond boiling point results in evolution of zinc vapors, which immediately reacts with air to form zinc oxide fume. Slabs must be completely dry before charging into molten metal to prevent a steam explosion.

**SECTION V - HEALTH HAZARD DATA**

<b><u>MATERIAL</u></b>	<b><u>FORM</u></b>	<b><u>OSHA-PEL</u></b>	<b><u>ACGIH-TLV</u></b>	
		TWA mg/m <sup>3</sup>	TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>
<b>ZINC</b>	Oxide Fume	5	2	10

**ROUTES OF ENTRY**

**PRIMARY:** Inhalation, if material has been heated above the boiling point, driving off zinc fume.

**SECONDARY:** Ingestion of dusts.

**EFFECTS OF SHORT TERM OVEREXPOSURE:**

**ZINC:** Inhalation of high levels of zinc vapor (zinc oxide fumes) may result in tightness of chest, metallic taste, cough, dizziness, fever, chills, headache, nausea, and dry throat. Overexposure may produce symptoms known as metal fume fever or "zinc shakes"; an acute, self-limiting condition without recognized complications. Symptoms of metal fume fever include: chills, fever, muscular pain, nausea and vomiting.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Inhalation of dust may be an irritant to pre-existing respiratory conditions.

**EMERGENCY AND FIRST AID PROCEDURES:** Symptoms resulting from inhalation overexposure usually disappear within 24 hours. Symptomatic treatment, such as bed rest and possibly aspirin is recommended to provide relief from fever and chills. In all cases, consult physician for medical attention.

**EFFECTS OF LONG TERM OVEREXPOSURE:**

**ZINC:** Chronic exposure to zinc may cause respiratory tract irritation with nasopharyngitis and laryngitis.

**CARCINOGENIC ASSESSMENT:**

**NTP?** No

**IARC MONOGRAPH?** No

**OSHA?** No

**SECTION VI - REACTIVITY DATA**

**STABILITY:** ( ) Unstable  
(X) Stable

**CONDITIONS TO AVOID:** None

**INCOMPATIBILITY (MATERIALS TO AVOID):** Avoid contact with acids and alkalis.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Zinc boils off as vapor at elevated temperatures.

**HAZARDOUS POLYMERIZATION:** ( ) May occur  
(X) Will not occur

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Material should be contained for recycling.

**WASTE DISPOSAL METHOD:** Material may be recycled or disposed of in accordance with Federal, State, and Local Environmental Regulations. This material may be regulated under CERCLA, TSCA, SARA, and/or RCRA Regulations.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (SPECIFY TYPE):** Use NIOSH/MSHA approved type respirator for protection against dust and metal fume.

**VENTILATION:** Local exhaust or other ventilation that will reduce dust concentrations to less than permissible exposure limits.

**PROTECTIVE GLOVES:** Recommended to prevent skin irritation in hypersensitive individuals.

**EYE PROTECTION:** Use safety eyewear for protection against airborne particulate matter.

**OTHER PROTECTIVE EQUIPMENT:** To prevent burns from contact with molten metal, appropriate protective garments should be worn. Such garments may include aprons, face shields, leggings, etc., depending on conditions of use.

### **SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Store in a dry location, separate from acids and alkalis. Keep metal dry so it does not contain any moisture when ready for use.

**OTHER PRECAUTIONS:** Damp slabs placed in molten metal may result in a steam explosion. Always practice good personal hygiene when working in areas where this material exists.

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