

WHMIS (Classification)

Not controlled (Canada)

WHMIS (Pictograms)

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name	Zinc Metal (Ingot, Shot)
Product Code	None
Supplier	Noranda Income Limited Partnership, 860 Cadieux Boulevard, Salaberry-de-Valleyfield (Quebec) Canada J6S 4W2
Information Contact	Viviane DeQuoy, Industrial Hygienist
Phone Number (Business hours)	1 (450) 373-9144 Extension 2394
Phone Number (Emergency)	1 (450) 373-9144 Extension 2220
Synonym	Zinc métallique (ingot, grenaille) (French)
DSL (Domestic Substance List)	Listed
Name / Chemical Formula	Zinc / Zn
Chemical Family	Metal
Utilization	Steel galvanizing ; Alloying ; Batteries.

SECTION 2. COMPOSITION AND INFORMATIONS ON INGREDIENTS

Name	CAS #	Percentage (%)	Exposure Limits		
			ACGIH (U.S.A.) 2006 TLV-TWA (mg/m ³)	OSHA (U.S.A.) PEL - TWA (mg/m ³)	QUÉBEC (CA) TWA EV (mg/m ³)
Zinc	7440-66-6	100	10 (inhal. particle N.O.S.) 3 (resp. particle N.O.S.)	15 (total dust N.O.S.) 5 (resp. dust N.O.S.)	10 (total dust N.O.S.) 5 (resp. dust N.O.S.)

ACGIH : American Conference of Governmental Industrial Hygienists. OSHA : Occupational Safety and Health Administration.

Note : **Zinc :** ACGIH TLV-TWA PNOC : Particulate matter containing no asbestos and < 1% crystalline silica. LD50 and LC50 : Not available. (RTECS).

Consult local authorities for acceptable exposure limits.

SECTION 3. RISK IDENTIFICATION FOR HUMAN HEALTH

Routes of Entry	Ingestion. Inhalation (Vapours).
Carcinogenicity	Zinc : NOT CLASSIFIED (IARC) ; NOT A CARCINOGEN (OSHA, NTP).
Mutagenicity	Not applicable.
Tératogenicity	Not applicable.
Acute Effects	Solid form : No health hazards. Conditions and work practices, which generate dust or fumes, should be avoided or controlled.

SECTION 4. FIRST AID MEASURES

Eye Contact	Not applicable (Ingot)
Skin Contact	Not applicable (Ingot)
Inhalation	Not applicable (Ingot)
Ingestion	Not applicable (Ingot)

SECTION 5. FIRE AND EXPLOSION DATA

Flash Point	Not applicable
Flammable Limits	Not applicable
Auto-Ignition Temperature	Not applicable
Products of Combustion	Zinc oxide
Fire Hazard	No fire hazard. Avoid melting moist metal.
Explosion Hazard	Not explosive (Mechanical impact ; Static discharge). Only DRY metal should be added to a molten bath. Exposure to excessive moisture may result in water infiltration into metal cavities. When added to a molten bath, this could lead to bubbling and possibility of explosion if the water is trapped within the internal cavities. NEVER spray water on burning metal because of the risk of explosion which would splatter flaming particles of metal to great distances.
Fire Fighting (Instructions)	NON-FLAMMABLE. Use fire fighting materials and procedures adapted to the immediate environment. Firefighters must wear full protective clothing and self-contained breathing apparatus (SCBA).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill	Use appropriate tools to pile up ingots in a secure way. Use appropriate tools to put the spilled shots in a convenient recycling container.
Personal Protection	Safety glasses. Coveralls. Work gloves and boots.

SECTION 7. HANDLING AND STORAGE

Handling **DO NOT** inhale dust and vapours. Follow good personal hygiene practices. Observe best foundry practices when storing, handling and processing this material.

Storage Away : Moisture, incompatible substances (Acids).

SECTION 8. ENGINEERING CONTROLS AND PERSONAL PROTECTION

Engineering Controls No special ventilation requirements

Personal Protection Safety glasses. Coveralls. Work gloves and boots.



SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance	Solid (Ingot ; Shot)	Odour	Odourless
Molecular Weight	65.37	Taste	Metallic
pH (1% soln/water)	Not applicable	Colour	Greyish
Boiling Point	908°C (1 666.4°F)	Vapour Density	Not available
Melting Point	420°C (788°F)	% Moisture	Not available
Critical Temperature	Not available	Odour Threshold	Not available
Specific Gravity	7.14 (Water = 1)	Water/Oil Dist. Coeff.	Insoluble (Water, oil)
Vapour Pressure	1 mm Hg at 487°C	Ionicity (in Water)	Not applicable
Volatility	Not available	Dispersion	Not available
Solubility	No (Water, methanol, diethyl ether, n-octanol, acetone) ; Yes (Acid, alkali).		

SECTION 10. STABILITY AND REACTIVITY DATA

Stability Yes

Conditions of Instability Not applicable

Incompatibilities **Zinc** : With ammonium nitrate, barium dioxide, barium dinitrate, chlorates, chlorides, fluorides, chlorine trifluoride, chromic trioxide, hydrazine mononitrate, hydroxylamine, performic acid, potassium nitrate, dipotassium peroxide, selenium, sodium peroxide, tellurium, sulfur, sodium hydroxide, nitrobenzene, oxidants ; Dust or very fine powder with water.

Corrosivity None

SECTION 11. TOXICOLOGICAL INFORMATION

Chronic Effects No known effects from chronic exposure.
Zinc : Essential for health. Vapour oxides inhalation, probably formed when heated to temperatures near or above the boiling point, may cause **metal fume fever**, a delayed, generally benign, transient, reversible flu-like condition.

Toxicity *Eating, drinking and smoking must be prohibited in areas where this material is handled and processed. Wash hands and face before eating, drinking and smoking.*

SECTION 12. ECOTOXICOLOGICAL INFORMATION

Ecotoxicity **Zinc** : Rainbow trout (LC50, 96h) : 1.2 ppm ; (LC50, 48 h) 4.76 ppm ; Zebra fish (LC50, 48 h) : 136 ppm.

Toxicity to Animals Not available

Biodegradation Products Not applicable

Biodegradation Products (Toxicity) Not applicable

Remarks on Environment No hazard for the environment (Ingot)

BOD5 and COD Not available

SECTION 13. DISPOSAL ARRANGEMENTS

Waste Disposal Recycle to process, if possible. Consult local or regional authorities.

SECTION 14. TRANSPORT INFORMATION

TDG (Pictograms) Not regulated (Canada)

PIN Not applicable

Special Provisions (Transport) No additional remarks

SECTION 15 OTHER REGULATIONS

Other Regulations EU (Existing Substances Annex I - Regulation (EC) 793/93) : Listed.
Zinc : EU Consolidated Inventories : EC Number 2311753
 CERCLA Section 103 Hazardous substances (40 CFR 302.4) ; SARA Section 313, Toxic Chemicals (40 CFR 372.65) :
Zinc (Final RQ) : *1 000 pounds (454 kg)

Classifications HCS (U.S.A.) Not regulated
Classifications DSCL (EEC) Not regulated

NFPA (National Fire Protection Association) (U.S.A.)

Fire Hazard 0 **Reactivity** 0 **Health** 0 **Special Hazard**

DOT (U.S.A.) (Pictograms)**DSCL (Europe) (Pictograms)****ADR (Europe) (Pictograms)****SECTION 16. OTHER INFORMATION**

- References**
- TLVs and BEIs (2005). Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. ACGIH, Cincinnati, OH – <http://www.acgih.org>
 - CCOHS (2005) - Canadian Centre for Occupational Health and Safety - <http://www.ccohs.ca/>
 - CSST (2005) - Commission de la Santé et de la Sécurité du Travail (Québec). Service du répertoire toxicologique - <http://www.reptox.csst.qc.ca/>
 - HSBD (2005) - Hazardous Substances Data Bank. TOXNET® Network of databases on toxicology, hazardous chemicals, and environmental health. NLM Databases & Electronic Resources, U.S. National Library of Medicine, NHI, 8600 Rockville Pike, Bethesda, MD 20894 - <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>
 - IARC - Monographs on the Evaluation of Carcinogenic Risks to Humans (collection) - <http://www.cie.iarc.fr/>
 - Merck Index (1999). Merck & CO., Inc, 12th edition
 - NIOSH U.S. (2005) - Pocket Guide to Chemical Hazards - <http://www.cdc.gov/niosh/npq/>
 - North American Emergency Response Guidebook Documents (2004), Developed by the U.S. Department of Transportation, Transport Canada, and the Secretariat of Communications and Transportation of Mexico
 - Patty's Industrial Hygiene and Toxicology, 3rd Revised Edition
 - Règlement sur les produits contrôlés (Canada)
 - RTECS (2005). Registry of Toxic Effects of Chemical Substances, NIOSH, CDC
 - Toxicologie industrielle & intoxication professionnelle, 3e édition, Lauwerys

Glossary

CSST : Commission de la Santé et de la Sécurité du Travail (Québec).
HSBD : Hazardous Substances Data Bank.
IARC : International Agency for Research on Cancer.
NIOSH : National Institute of Occupational Safety and Health.
NTP : U.S. National Toxicology Program.
RTECS : Registry of Toxic Effects of Chemical Substances

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