

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Zinc Metal Powder, Enriched Zinc
Chemical Formula	Zn
Molecular Weight	65.39 g/mol
CAS No.	7440-66-6
RTECS No.	ZG8600000
Synonyms	Blue powder, Granular zinc, LS 2, LS 6, Merrillite, Rheinzink, Zinc dust, Zinc powder
Recommended Use	Laboratory chemicals
Supplier Address*	ISO FLEX USA PO Box 29475 San Francisco CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac / +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISO FLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

Contact with water liberates extremely flammable gases. Spontaneously flammable in air.
Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 2 Reactivity = 2 Special Notice = W (reacts with water)



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 2 Physical Hazard = 2

HEALTH HAZARD	2
FLAMMABILITY	2
PHYSICAL HAZARD	2

Potential Health Effects

<i>Inhalation</i>	May be harmful if inhaled; may cause respiratory tract irritation
<i>Skin</i>	May be harmful if absorbed through skin; may cause skin irritation
<i>Eyes</i>	May cause eye irritation
<i>Ingestion</i>	May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Name	Zinc Metal Powder, Enriched Zinc
Chemical Formula	Zn
Molecular Weight	65.39 g/mol
Weight %	99.999
CAS No.	7440-66-6

4. FIRST AID MEASURES

<i>Eye Exposure</i>	Flush eyes with water as a precaution.
<i>Dermal Exposure</i>	Wash off with soap and plenty of water. Consult a physician.
<i>Inhalation</i>	Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<i>Ingestion</i>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media Dry sand, clay, approved class D extinguishers. **DO NOT USE WATER.**

Firefighting

<i>Protective Equipment</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Specific Hazards</i>	Flammable. Fine dust dispersed in air may ignite. Pyrophoric: Spontaneously flammable in air. Water-reactive. Contact with water liberates extremely flammable gases. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Avoid dust formation. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.
<i>Environmental Precautions</i>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
<i>Methods for Cleaning Up</i>	Pick up and arrange disposal without creating dust. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

<i>Handling</i>	Provide appropriate exhaust ventilation at places where dust is formed. Further processing of solid materials may result in the formation of combustible dusts. Keep away from sources of ignition. Provide appropriate exhaust at places where dust is formed.
<i>Storage</i>	Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<i>Engineering Controls</i>	Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.
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Personal Protective Equipment

<i>Respiratory Protection</i>	Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridge as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Where risk assessment shows air-purifying respirators are appropriate, use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<i>Hand Protection</i>	The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle product with gloves.
<i>Eye Protection</i>	Face shield and safety glasses
<i>Skin and Body Protection</i>	Choose body protection according to the amount and concentration of the dangerous substance at the workplace.
<i>Hygiene Measures</i>	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Powder
Color	Grey
Odor	Odorless

Safety Data

pH	N/A
Melting Point	419 °C
Boiling Point	907 °C
Flash Point	N/A
Ignition Temperature	N/A
Lower Explosion Limit	N/A
Upper Explosion Limit	N/A
Vapor Pressure	N/A
Vapor Density	7133 g/mL at 25 °C
Water Solubility	Insoluble
Explosive Properties	During processing, dust may form explosive mixture in air.
Oxidizing Properties	N/A
Bulk Density	1.8-3.2 kg/m ³

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Water-reactive, moisture-sensitive, air-sensitive, pyrophoric: spontaneously flammable in air
<i>Hazardous Decomposition Products</i>	Zinc/zinc oxides, zinc oxide fumes
<i>Conditions to Avoid</i>	Heat, flames and sparks, moisture, dust formation
<i>Materials to Avoid</i>	Strong acids and oxidizing agents

11. TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure Chills, dry throat, sweet taste, fever, cough, nausea, vomiting, weakness

Acute Toxicity

<i>Irritation and Corrosion</i>	No data available
<i>Sensitization</i>	Did not cause sensitization on laboratory animals
<i>Reproductive Toxicity</i>	No data available
<i>Specific Target Organ Toxicity - Single Exposure</i>	No data available
<i>Specific Target Organ Toxicity - Repeated Exposure</i>	No data available

Carcinogenicity

<i>IARC</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.
<i>ACGIH</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<i>NTP</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<i>OSHA</i>	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to Fish	LC50 – <i>Cyprinus carpio</i> (carp) – 450 µg/l – 96 h
Toxicity to Daphnia and Other Aquatic Invertebrates	LC50 – <i>Daphnia magna</i> (water flea) – 0.068 mg/l – 48 h Mortality NOEC – <i>Daphnia</i> (water flea) 0.101 – 0.14 mg/l – 7 d

Further information on ecology: Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Persistence and Degradability Methods for determining the biological degradability are not applicable to inorganic substances.

<i>Bioaccumulative Potential</i>	Bioaccumulation: Algae – 7 d at 16 °C – 5 µg/l Bioconcentration Factor (BCF): 466
<i>Mobility in Soil</i>	No data available
<i>Results of PBT and vPvB Assessment</i>	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
<i>Other Adverse Effects</i>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life, with long-lasting effects.

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	Zinc Powder
UN No.	UN1436
Hazard Class	4.3
Subsidiary Hazard Class	4.2
Packing Group	II

TDG

Proper Shipping Name	Zinc Powder
UN No.	UN1436
Hazard Class	4.3
Subsidiary Hazard Class	4.2
Packing Group	II

IATA

Proper Shipping Name	Zinc Powder
UN No.	UN1436
Hazard Class	4.3
Subsidiary Hazard Class	4.2
Packing Group	II

IMDG/IMO

Proper Shipping Name	Zinc Powder
UN No.	UN1436
Hazard Class	4.3
Subsidiary Hazard Class	4.2
Packing Group	II

15. REGULATORY INFORMATION

TSCA 12(b)	Not applicable
SARA 311/312 Hazards	
Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Reactive Hazard	Yes
Clean Water Act	CWA-Toxic Pollutants: Listed
Clean Air Act	Not applicable

OSHA	Not applicable
CERCLA	This material contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302). Hazardous Substances RQs: 1000 lb
Massachusetts Right to Know Components	CAS No. 7440-66-6
Pennsylvania Right to Know Components	CAS No. 7440-66-6
New Jersey Right to Know Components	CAS No. 7440-66-6
California Prop. 65 Components	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.
U.S. Department of Transportation	
Reportable Quantity (RQ)	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N
U.S. Department of Homeland Security	
This product does not contain any DHS chemicals.	
Other International Regulations	
Canada	This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR).
WHMIS Hazard Class	B6 Reactive flammable material.

16. **OTHER INFORMATION**

Prepared By	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Issuing Date	September 15, 2014
Revision Date	July 29, 2021
Revision Number	4
Revision Note	Required review and update

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)

CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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