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SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION	PRODUCT NAME	
Zn	**Zinc**	
SUPPLIER: **Plasmaterials, Inc.** **2268 Research Drive** **Livermore, CA 94550** **Ph: 925-447-4030**	RECOMMENDED USE: **Laboratory Chemicals** **Scientific Research**	EMERGENCY TELEPHONE NUMBERS **US: 001-800-424-9300** **Europe: 001-703-527-3887**

Section 2- HAZARD(S) IDENTIFICATION

Classification:
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity (Oral): Category 4 (H341)

Acute Aquatic Toxicity: Category 1 (H400) | **Chronic Aquatic Toxicity:** Category 1 (H410)

LABEL ELEMENTS: Signal Word: Danger

HAZARD STATEMENTS

-H228: Flammable Solid
-H250: Catches fir spontaneously if exposed to air.
-H260: In contact with water, releases flammable gas
-H302: Harmful if swallowed
-H320: Causes eye irritation
-H400: Very toxic to aquatic life
-H410: Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

-P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
-P222: Do not allow contact with air
-P231: Handle under inert gas
-P232: Protect from moisture
-P240: Ground/bond container and receiving equipment
-P241: Use explosion-proof electrical/ventilating/lighting equipment
-P264: Wash thoroughly after handling
-P270: Do not eat, drink or smoke when using this product
-P273: Avoid release to the environment.
-P280: Wear protective gloves, protective clothing, eye protection and face protection
-P301 + P312 + P330: If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.
-P334: Immerse in cool water/wrap in wet bandages
-P335: Brush off loose particles from skin
-P337 + P313: If eye irritation persists: Get medical advice/attention

-P391: Collect spillage.
-P402: Store in a dry place
-P404: Store in a closed container
-P422: Store contents under appropriate liquid or inert gas
-P501: Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC):

-Combustible dust

Section 3- COMPOSITION/INFORMATION ON INGREDIANTS

COMPONENT	CAS-No	Molecular Weight
Zinc	**7440-66-6**	**65.39 g/mol**

Section 4- FIRST AID MEASURES

GENERAL ADVICE: If exposed or concerned, get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Move out of dangerous area. Wash contaminated clothing before reuse.

INHALATION: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Call a physician if symptoms develop or persist.

SKIN CONTACT: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Get medical attention if irritation develops and persists.

EYE CONTACT: Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists, get medical advice/attention.

INGESTION: Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell. If swallowed, call a poison center or doctor/physician if you feel unwell.

MOST IMPORTANT SYMPTOMS/EFFECTS: The most important known symptoms and effects are described in the labeling (see section 2). Irritation of eyes and mucous membranes.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:	**Unsuitable Extinguishing Media:**
Powder, Dry Sand, Alcohol-Resistant Foam, Dry Chemical, Carbon Dioxide	Water. Do not use water jet as an extinguisher as this will spread the fire.

Specific Hazards Arising from the Chemical:

No data available

Protective Equipment & Precautions for Firefighters:

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Firefighting Instructions/Specific Methods:

Use water spray to cool unopened containers. Water runoff can cause environmental damage. Use standard firefighting procedures and consider the hazards of other involved materials.

General Fire Hazards:

No unusual fire or explosion hazards noted.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Keep unnecessary personnel away from and upwind of spill/leak. Keep out of low areas. Evacuate personnel to safe areas. Wear appropriate protective equipment

and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained. For personal protection see Section 8.

Environmental Precautions: Discharge into the environment must be avoided. Inform appropriate managerial or supervisory personnel and local authorities of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into water courses, drains and onto the ground. See Section 12 for additional ecological information.

Methods for Containment & Clean Up: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles away from spilled material. Stop the flow of material, if this is without risk. Collect spillage. Do not get water on spilled substance or inside containers. Do not let this chemical enter the environment, waterways, sewer, basements or confined areas. Never return spills to original containers for re-use. Keep in suitable, closed containers for disposal. For disposal see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Use explosion-proof equipment. Do not taste or swallow. Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personnel protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Storage:
Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a cool, dry, well-ventilated place out of direct sunlight. Store away from incompatible materials (see Section 10). Never allow product to get in contact with water during storage.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:
No occupational exposure limit values noted for ingredient(s).

Biological Limit Values:
No biological exposure limits noted for ingredient(s).

Engineering Measures: Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high. Provide eyewash station. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:
Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin and Body Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dusk masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of Environmental Exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Appearance: Grey

Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting Point/Range: 420°C / 788°F
Boiling Point/Range: 907°C / 1665°F
Flash Point: No data available
Evaporation Rate: No data available
Flammability (solid,gas): Flammable solid. May form combustible dust concentration in air.
Flammability or Exposure Limits:
Upper: No data available
Lower: No data available
Vapor Pressure: No data available
Vapor Density: No data available
Relative Density: 7.140 g/cm3
Solubility: No data available
Partition coefficient; n-octanol/water: No data available
Auto Ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available
Explosive Properties: No data available
Oxidizing Properties: No data available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage and transport

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials. High temperatures.

Incompatible Materials: Acids, strong bases, chlorides, fluorine, nitrates, carbon disulfide, water

Hazardous Decomposition Products:
Hazardous decomposition products formed under fire conditions-Zinc/Zinc Oxides
Other decomposition products-No data available

Hazardous Polymerization: No data available

Hazardous Reactions: No data available

Section 11- TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute toxicity: No data available.
Inhalation: No data available.
Skin Contact: No data available
Eye Contact: Causes eye irritation
Ingestion: Harmful if swallowed
Skin Corrosion/Irritation: No information available
Serious eye damage/irritation: Causes eye irritation
Respiratory Sensitization: No data available
Skin Sensitization: No data available
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
-IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.
-NTP: No component of this product present at levels greater than or equal to 0.1% is identified as

a known or anticipated carcinogen.
-OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.
Germ Cell Mutagenicity: No data available
Reproductive Toxicity: No data available
Specific Target Organ Toxicity – single exposure: No data available
Specific Target Organ Toxicity – repeated exposure: No data available
Aspiration Hazard: No information available
Additional Information:
-RTECS: Not available
To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected
Toxicity to Fish:
-Crustacea – EC50 – Water flea (Daphnia magna) – 2.8 mg/l – 48.0 h
-Fish – LC50 – Rainbow trout, Donaldson trout (Oncorhynchus mykiss) – 0.56 mg/l – 96.0 h
Persistence and Degradability: No information available
Bioaccumulation/Accumulation: No information available
Mobility in Soil: No information available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other Adverse Effects: No information available.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods

IATA: Not regulated as dangerous goods

IMDG/IMO: Not regulated as dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations:
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Listed
CERCLA Hazardous Substance List (40 CFR 302.4): Zinc (CAS No: 7440-66-6) – Listed
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

Component	CAS No.	% By Weight
Zinc	7440-66-6	90-100

SARA 311/312 Hazards: Yes
SARA 304 Emergency Release Notification: Not regulated
SARA Hazard Categories:
Immediate Hazard: Yes
Delayed Hazard: No

Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

HMIS (USA):
Health Hazard: 0
Chronic Health Hazard:
Flammability: 0
Physical Hazard: 0

National Fire Protection Association (USA):
Health Hazard: 0
Fire Hazard: 0
Reactivity Hazard: 0

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated
Clean Water Act (CWA) Section 112 (r) (40 CFR 68.130): Priority pollutant – Toxic pollutant
Safe Drinking Water Act (SDWA): Not regulated
US Massachusetts Right To Know:

Component	CAS No.	Revision Date
Zinc	7440-66-6	1993-04-24

US New Jersey Right to Know:

Component	CAS No.	Revision Date
Zinc	7440-66-6	1993-04-24

US Pennsylvania Right to Know:

Component	CAS No.	Revision Date
Zinc	7440-66-6	1993-04-24

US California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.
US California Candidate Chemicals List Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3 subd. (a)): Zinc (CAS-No: 7440-66-6)

Section 16- OTHER INFORMATION

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, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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