1. PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Lithium Lanthanum Zirconate

Chemical Formula: $Li_7La_3Zr_2O_{12}$

Manufacturer Item Number: LI-2875

Manufacturer:
Lorad Chemical Corporation
1200 19th Street North
Saint Petersburg, Florida, 33713
United States of America

Telephone: +1 (727) 826–5511

Fax: +1 (727) 826–5510

Emergency Contact:
(800) 255–3924 (US & Canada)
+1 (813) 248–0573 (International)

2. HAZARD IDENTIFICATION

Hazard Classification
Skin corrosion / irrigation (Category 1B)
Specific target organ toxicity, single exposure; respiratory tract (Category 3)

Signal Word: Danger

Pictograms:



Hazard Statements:

H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

Precautionary Statements:

Prevention

P260	Do not breath dust / fumes / gas / mist / vapors / spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves / protective clothing / eye protection / face protection

Response

P301+330+331	IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P302+361+354	IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P363	Wash contaminated clothing before reuse.
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316	Get emergency medical help immediately.
P305+354+338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P403+233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501 Dispose of contents / container to an approved waste disposal plant.

Other Hazards No Data Available.

3. COMPOSITION

Additional Names: Lithium Lanthanum Zirconium Oxide, LLZO

Percentage:	**Component**	**Classification**	**Concentration**
	Lithium Lanthanum Zirconate	Skin Corr. 1B, H314; STOT SE 3, H335	100% wt

CAS #: 960215-99-0

EC #: Not assigned.

4. FIRST AID PROCEDURES

General Treatment Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area.

Special Treatment: No Data Available.

Important Symptoms: No Data Available.

Inhalation: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Avoid vomiting. Do not attempt to neutralize. Consult a physician.

Skin: For skin contact, flush with large amounts of soap and water while removing contaminated clothing. Consult a physician.

Eyes: Immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Consult a physician.

5. FIREFIGHTING MEASURES

Special Hazards from Substance: Lithium oxide, Zirconium oxide, Lanthanum oxide

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

If Material is Released / Spilled: Use appropriate personal protective equipment. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Isolate spill area and provide ventilation. Pick up and arrange dispose without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Environmental Precautions: Prevent further leakage or spills if safe to do so. Do not allow to enter drains, sewers, or watercourses.

7. HANDLING AND STORAGE

Handling Conditions: Provide appropriate exhaust ventilation at places where dust is formed. Handle under protective gas.

Storage Conditions: Keep in tightly closed container in a cool dry place. Store away from water, oxidizing agents.

Work / Hygienic Maintenance: Handle in accordance with good industrial hygiene and safety procedures. Do not use tobacco or food in the work area. Wash thoroughly before eating, drinking, or smoking. Do not blow dust off clothing or skin with compressed air.

Ventilation: Ensure good ventilation / exhaust in any work areas.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible Exposure Limits:

Authority	Basis	Limit	Remarks
OSHA	PEL	15.0 mg/m^3	Particulates not otherwise regulated (total dust)
OSHA	PEL	5.0 mg/m^3	Particulates not otherwise regulated (respirable fraction)

Threshold Limit Value:

Authority	Basis	Limit	Remarks
ACGIH	TLV	10.0 mg/m^3	Particulates not otherwise specified (inhalable)
ACGIH	TLV	3.0 mg/m^3	Particulates not otherwise specified (respirable)

References:

PEL	Permissible Exposure Limit
REL	Recommended Exposure Limit
TWA	Time Weighted Average
IDLH	Immediately Dangerous to Life or Health
TLV	Threshold Limit Value

Special Equipment: Handle in accordance with good industrial hygiene and safety practices.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type P100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineered controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US or CEN (EU).

Protective Gloves: 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.

Eye Protection: Face shield and protective goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body Protection: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

Color:	Pale gray	**Molecular Weight:**	839.74 g/mol
Forms:	Powder	**Theoretical Density:**	No Data Available.
Odor:	Odorless	**pH:**	No Data Available.
Water Solubility:	Insoluble	**Auto-Ignition Temperature:**	No Data Available.
Boiling Point:	No Data Available.	**Evaporation Rate:**	No Data Available.
Melting Point / Freezing Point:	>190–200°C (>374°F)	**Flammability or Explosive Limits:**	No Data Available.
Vapor Pressure:	No Data Available.	**Partition Coefficient: n-octanol/ water**	No Data Available.

Vapor Density:	No Data Available.	**Decomposition Temperature:**	No Data Available.
Flash Point:	No Data Available.	**Viscosity:**	No Data Available.

10. REACTIVITY

Stability: Stable under recommended storage conditions.

Reacts with: Strong oxidizing agents.

Incompatible Conditions: Water, oxidizing agents

Hazardous Decomposition Products: Lithium oxide, Lanthanum oxide, Zirconium oxide

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Eyes: Causes severe eye damage.

Skin: Causes severe skin burns.

Ingestion: No Data Available.

Inhalation: May cause respiratory irritation.

Chronic Toxicity

Skin Corrosion / Irritation: No Data Available.

Serious Eye Damage / Irritation: No Data Available.

Respiratory / Skin Sensitization: No Data Available.

Mutagenic Effects: No Data Available.

Reproductive / Teratogenic Effects: No Data Available.

Specific Target Organ Toxicity: (single exposure) No Data Available.

Specific Target Organ Toxicity: (repeated exposure) No Data Available.

Aspiration Hazard: No Data Available.

Other Adverse Effects: No Data Available.

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

ACGIH: 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.

NTP: 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.

OSHA: 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.

Additional Information: No Data Available.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: No Data Available.

Persistence and degradability: No applicable to inorganic substances.

Bioaccumulative potential: No Data Available.

Notes: No Data Available.

13. DISPOSAL CONSIDERATIONS

Disposal: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Empty containers should be taken to an appropriate waste handling site for recycling or disposal. Dispose of in accordance with local, state, or national regulations.

14. TRANSPORTATION DATA

Hazardous:

DoT: Hazardous for Transportation
IMDG: Hazardous for Transportation
IATA: Hazardous for Transportation

Pictogram:



Hazard Class: 8

Packing Group: III

UN Number: UN3262

US DoT

Proper Name: CORROSIVE SOLID, BASIC, N.O.S. (Lithium Lanthanum Zirconate)

Marine Pollutant: Yes

IMDG

Proper Name: CORROSIVE SOLID, BASIC, N.O.S. (Lithium Lanthanum Zirconate)

EMS-No: F-A, S-B

Marine Pollutant: Yes

IATA

Proper Name: CORROSIVE SOLID, BASIC, N.O.S. (Lithium Lanthanum Zirconate)

15. REGULATORY INFORMATION

Toxic Substance Control Act Not Listed.

SARA 302 Components No chemicals in this material are subject to the reporting requirements of SARA title III, Section 302.

SARA 313 Components This material does not contain any chemical components with known CAS numbers that exceed the threshold (de minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards Acute Health Hazard

Massachusetts Right to Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components	No components are listed in Appendix A of the Pennsylvania Worker and Community Right to Know Act.
New Jersey Right to Know Components	No components are listed on the New Jersey Right to Know Hazardous Substance List.
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.

16. OTHER INFORMATION

Copyright 2025 Lorad Chemical Corporation. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. The information in this sheet does not represent a guarantee of the properties of the product. Lorad Chemical Corporation and its Affiliates make no warranty with respect to the accuracy of the information or the suitability of this product for any particular application, and shall not be held liable for any damage resulting from handling or from contact with the above product.

Revision Date: 11/10/2025