



LTS Research Laboratories, Inc.
Safety Data Sheet
Lithium Lanthanum Zirconium Oxide

1. Product and Company Identification

Trade Name: Lithium lanthanum zirconium oxide
Chemical Formula: $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.
Street: 37 Ramland Road
City: Orangeburg
State: New York
Zip Code: 10962
Country: USA
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)
+1-703-527-3887 (International)

2. Hazards Identification

Signal Word: Danger



Hazard Statements: H314: Causes severe skin burns and eye damage
H335: May cause respiratory irritation

Precautionary Statements: P260: Do not breathe dust/fume/gas/mist/vapours/spray
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):
Health: 3
Flammability: 0
Physical: 1

3. Composition

Chemical Family: Ceramic
Additional Names: None

Lithium lanthanum zirconium oxide ($\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$):

Percentage: 100 wt%
CAS #: NIL
EC #: NIL

4. First Aid Procedures

General Treatment: Seek immediate medical attention.
Special Treatment: None
Important Symptoms: None

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion: Seek immediate medical attention.
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

5. Firefighting Measures

Flammability: Non-flammable
Extinguishing Media: No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.
Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions: Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions: Handle under dry protective gas. Wash thoroughly after handling.
Storage Conditions: Store in a cool dry place in a tightly sealed container. Store under dry inert gas. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	5 mg/m ³ as Zr, long-term value
Threshold Limit Value:	10 mg/m ³ as Zr, short-term value 5 mg/m ³ as Zr, long-term value
Special Equipment:	None
Respiratory Protection:	Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR
Penetration time of glove material:	N/A
Eye Protection:	Safety glasses or goggles, Full face protection
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Light Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	839.74 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Mineral acids, Acids, Water, Oxidizing agents
Incompatible Conditions:	Air, Water/moisture
Hazardous Decomposition Products:	Lithium oxide, Metal oxide fume

11. Toxicological Information

Potential Health Effects:	
Eyes:	Causes serious eye damage
Skin:	Causes irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A
Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	>8500 mg/kg for rat by mouth
Carcinogen:	N/A

12. Ecological Information

Aquatic Toxicity: Low
Persistent Bioaccumulation Toxicity: No
Very Persistent, Very Bioaccumulative: No
Notes: N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous: Hazardous for transportation.



Hazard Class: 8 Corrosive substances
Packing Group: III
UN Number: UN3262
Proper Shipping Name: Corrosive solid, basic, inorganic, n.o.s.
(Lithium lanthanum zirconium oxide)

15. Regulatory Information

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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