



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Lead Zirconium Titanate

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1. Product and Company Identification

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Trade Name: Lead zirconium titanate  
Chemical Formula:  $PbZr_xTi_{1-x}O_3$   
or lead-saturated:  $Pb_{1+\delta}Zr_xTi_{1-x}O_3$   
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)

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2. Hazards Identification

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Signal Word:

Warning



Hazard Statements:

H302+H332: Harmful if swallowed or if inhaled  
H360: May damage fertility or the unborn child  
H373: May cause damage to reproductive system, the blood, the brain and the endocrine systems through prolonged or repeated exposure.  
Route of exposure: Oral, Inhalative

Precautionary Statements:

P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P281: Use personal protective equipment as required  
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: 1  
Flammability: 0  
Physical: 1

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3. Composition

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Chemical Family: Ceramic  
Additional Names: PZT, Lead zirconium titanate

Lead zirconium titanium oxide ( $Pb_{1+\delta}Zr_xTi_{1-x}O_3$ ):

Percentage: 100 wt%  
CAS #: 12626-81-2  
EC #: 235-727-4

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#### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
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

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#### 5. Firefighting Measures

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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.

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#### 6. Accidental Release Measures

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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.

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#### 7. Handling and Storage

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Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. 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.

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#### 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	0.05 mg/m <sup>3</sup> as Pb, long-term value, see 29CFR 1310.1025
Threshold Limit Value:	0.05 mg/m <sup>3</sup> as Pb, long-term value, BEI
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	Silvery-white
Form:	Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Lead oxide fume, Zirconium oxide, Titanium oxide

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	Harmful
Inhalation:	Harmful
Chronic:	N/A

### Signs & Symptoms:

Aggravated Medical Conditions:

N/A  
N/A

### Median Lethal Dose:

### Carcinogen:

N/A

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.  
NTP-R: Reasonably anticipated to be a carcinogen, limited evidence of carcinogenicity from epidemiologic studies.  
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by routes of administration, at sites, of histologic types, or by mechanisms not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or level of exposure.  
IARC-2A: Probably carcinogenic to humans: limited human evidence; sufficient evidence in experimental animals.

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## 12. Ecological Information

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

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### 13. Disposal Considerations

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

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### 14. Transportation Data

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Hazardous:	Not hazardous for transportation.
Hazard Class:	N/A
Packing Group:	N/A
UN Number:	N/A
Proper Shipping Name:	N/A

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### 15. Regulatory Information

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

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### 16. Other Information

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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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