



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Zinc Oxide-Aluminum

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1. Product and Company Identification

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Trade Name: Zinc oxide-aluminum  
Chemical Formula: ZnO-Al  
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

Emergency Contact (ChemTrec) Tel #: 800-424-9300 (US & Canada)  
+1-703-527-3887 (International)

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2. Hazards Identification

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Signal Word: None



Hazard Statements: H250: Catches fire spontaneously if exposed to air  
H261: In contact with water releases flammable gas  
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  
P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire  
P273: Avoid release to the environment  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P231+P232: Handle under inert gas. Protect from moisture  
P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages  
P370+P378: In case of fire: Use fire-fighting equipment on basis class D for extinction  
P391: Collect spillage  
P402+P404: Store in a dry place. Store in a closed container  
P403+P233: Store in a well-ventilated place. Keep container tightly closed  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):	Powder	Bulk
Health:	1	0
Flammability:	3	0
Reactivity:	2	0

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### 3. Composition

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Chemical Family:	Composite
Additional Names:	N/A
Zinc oxide (ZnO):	
Percentage:	0-99 wt%
CAS #:	1314-13-2
EC #:	215-222-5
Aluminum (Al):	
Percentage:	0-99 wt%
CAS #:	7429-90-5
EC #:	231-072-3

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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 ten minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Fire and explosion hazards data

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Flammability:	Non-flammable, except as powder
Flash Point:	N/A
Autoignition Temperature:	N/A
Extinguishing Media:	Do not use water for metal fires – use CO <sub>2</sub> , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes.

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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.
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 TLV.

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## 8. Exposure Controls / Personal Protection

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Permissible Exposure Limits:	5 mg/m <sup>3</sup> as ZnO, long-term value 15 mg/m <sup>3</sup> as Al, long-term value
Threshold Limit Value:	2 mg/m <sup>3</sup> as ZnO, long-term value 1 mg/m <sup>3</sup> as Al, long-term value
Special Equipment:	None
Respiratory Protection:	Dust Respirator, NIOSH approved
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses / 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	Silver gray
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	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:	Water, Strong acids, Strong bases, Alcohols, Halogens, Halogenated compounds, CO <sub>2</sub> , Strong oxidizing agents, Hydrogen peroxide, Magnesium
Incompatible Conditions:	Avoid dust formation, Exposure to air, Exposure to moist air or water, Excess heat
Haz. Decomposition Products:	Metal oxide fume, Hydrogen

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## 11. Toxicological Information

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Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	Low toxicity
Inhalation:	May cause irritation
Details:	Zinc compounds have variable low toxicity. Zinc is not inherently a toxic element. However, when heated it evolves a fume of zinc oxide which, when inhaled fresh can cause a disease known as "brass founders" "ague", or brass chills". Zinc dust which is not freshly formed is virtually innocuous. There is no cumulative effect from the inhalation of zinc fumes.
Routes of Entry:	None
Target Organs:	N/A
Signs & Symptoms of Exposure:	N/A
Medical Conditions	
Aggravated by Exposure:	N/A

Median Lethal Dose: N/A  
Carcinogen: Inadequate information

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#### 12. Ecological Information

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Ecological effects: Danger to drinking water, even in small doses.  
Poisonous to fish and aquatic life.

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#### 13. Disposal Considerations

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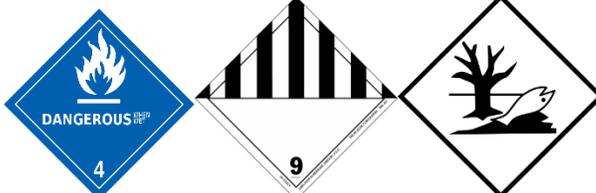
Dispose of in accordance with local, state and federal regulations.

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#### 14. Transportation Data

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Hazardous: Hazardous for transportation as powder



Hazard Class: 4.3 Substances which, in contact with water produce flammable gas  
9 Miscellaneous dangerous goods  
Packing Group: III  
UN Number: UN1396, UN3077  
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (zinc oxide, aluminum)

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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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