LTS Research Laboratories, Inc.
Safety Data Sheet
Zinc oxide phosphorus oxide

1. Product and Company Identification

Trade Name:	Zinc oxide phosphorus oxide
Chemical Formula:	$ZnO\text{-}P_2O_5$
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 #:	845-587-2436 / 845-lts-chem
Emergency Contact (ChemTrec) Tel #:	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
H401: Toxic to aquatic life

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
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
Reactivity:	1

3. Composition

Chemical Family:	Ceramic
Additional Names:	Zinc oxide (P doped), Zinc oxide phosphorus pentoxide

Zinc oxide (ZnO):

Percentage:	0-99 wt%
CAS #:	1314-13-2
EC #:	215-222-5

Phosphorus pentoxide (P_2O_5):

Percentage:	0-99 wt%
CAS #:	1314-56-3
EC #:	215-236-1

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	Causes severe skin burns Causes serious eye damage
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.

5. Fire and explosion hazards data

Flammability:	Non-flammable
Flash Point:	N/A
Autoignition Temperature:	N/A
Extinguishing Media:	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.

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:	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.

8. Exposure Controls / Personal Protection

Permissible Exposure Limits:	5 mg/m^3 as ZnO respirable fraction (USA)
Threshold Limit Value:	2 mg/m^3 as ZnO long-term respirable fraction (USA)
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 0.11mm thick.
Penetration time of glove material:	480 minutes
Eye Protection:	Safety glasses / goggles

Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	White
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

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Water, Bases, Oxidizing agents
Incompatible Conditions:	Air, water/moisture
Haz. Decomposition Products:	Metal oxide fume, Phosphorus oxide

11. Toxicological Information

Potential Health Effects:	
Eyes:	Causes serious eye damage
Skin:	Causes severe skin burns
Ingestion:	Strong corrosive effect on mouth and throat to the danger of perforation of esophagus and stomach
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

12. Ecological Information

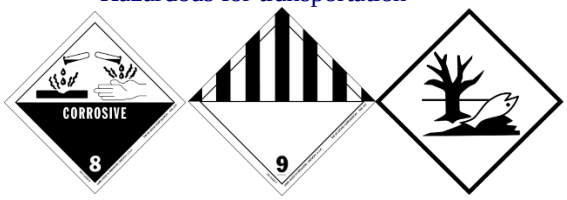
Ecological effects:	Danger to drinking water, even in small doses. Poisonous to fish and aquatic life.

13. Disposal Considerations

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

14. Transportation Data

Hazardous:	Hazardous for transportation



Hazard Class:	8 Corrosive substances 9 Miscellaneous dangerous goods
Packing Group:	III
UN Number:	UN1807, UN3077
Proper Shipping Name:	Environmentally hazardous substance, solid, n.o.s. (zinc oxide, phosphorus pentoxide)

15. Regulatory Information

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

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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