



LTS Research Laboratories, Inc.
Safety Data Sheet
Lithium Phosphorus Sulfide

1. Product and Company Identification

Trade Name: Lithium Phosphorus Sulfide
Chemical Formula: Li_3PS_4
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.
Street: 2001 Oaks Pkwy
City: Belmont
State: North Carolina
Zip Code: 28012
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:

- H228: Flammable solid
- H260: In contact with water releases flammable gases which may ignite spontaneously
- H301: Toxic if swallowed
- H314: Causes severe skin burns and eye damage
- H332: Harmful if inhaled
- H400: Very toxic to aquatic life

Precautionary Statements:

- P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking
- P223: Do not allow contact with water
- P231 + P232: Handle under inert gas. Protect from moisture
- P240: Ground/bond container and receiving equipment
- P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment
- P260: Do not breathe dusts or mists
- P264: Wash face, hands, and any exposed skin thoroughly after handling
- P270: Do not eat, drink or smoke when using this product
- P271: Use only outdoors or in a well-ventilated area
- P273: Avoid release to the environment
- P280: Wear protective gloves/ protective clothing/ eye protection/ face Protection

P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth
 P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all Contaminated clothing. Rinse skin with water/ shower
 P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor
 P305 + P351 + P338 +P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor
 P335 + P334: Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages
 P363: Wash contaminated clothing before reuse
 P370 + P378: In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam to extinguish
 P391: Collect spillage
 P402 + P404: Store in a dry place. Store in a closed container.
 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:	2
Physical:	2

3. Composition

Chemical Family: Inorganic compound
 Additional Names: Lithium Sulfide Phosphorus Sulfide

Lithium Phosphorus Sulfide (Li₃PS₄):

Percentage:	100 wt%
CAS #:	82857-67-8
EC #:	N/A

4. First Aid Procedures

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:	Do NOT induce vomiting. Rinse mouth with water. Never induce vomiting or give anything by mouth to an unconscious person. Consult a physician.
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:	Flammable Reacts violently with water
Extinguishing Media: Spec. Fire Fighting Procedure:	Do not use water for metal fires – use CO ₂ , sand, extinguishing powder. 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. Avoid formations of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Take measures to prevent the build up of electrostatic charge.
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: Threshold Limit Value:	N/A N/A
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Penetration time of glove material:	480 minutes
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Rotten eggs
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:	180.05 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts with:	Water, Acids, Oxidizing agents
Incompatible Conditions/Materials:	Acids, Water/Moisture, Heat, Sparks, Flames, Moisture
Hazardous Decomposition Products:	Sulfur oxides, phosphorous oxides, lithium oxides

11. Toxicological Information

Potential Health Effects:

Eyes:	Causes eye damage
Skin:	Causes skin irritation
Ingestion:	Toxic if swallowed
Inhalation:	Harmful if inhaled
Chronic:	N/A

Signs & Symptoms:

Aggravated Medical Conditions:

N/A
N/A

Median Lethal Dose:

N/A

Carcinogen:

N/A

Additional Information:

N/A

12. Ecological Information

Aquatic Toxicity:

High

Persistent Bioaccumulation Toxicity:

N/A

Very Persistent, Very Bioaccumulative:

N/A

Notes:

Toxic to aquatic life.
May cause long lasting harmful effect on aquatic life.
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Do not allow product to reach any water sources.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.

13. Disposal Considerations

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

14. Transportation Data

Hazardous:

Hazardous for transportation as powder only



Hazard Class:

4.3 Substances which in contact with water release flammable gases

Secondary Class

8 Corrosive

Packing Group:

II

UN Number:

UN3131

Proper Shipping Name:

Water-reactive solid, corrosive, n.o.s. (Lithium Phosphorus Sulfide)

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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