



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Lithium Phosphorus Sulfur Iodide

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1. Product and Company Identification

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Trade Name:	Lithium Phosphorus Sulfur Iodide
Chemical Formula:	$\text{Li}_6\text{PS}_5\text{I}$
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:

Danger



Hazard Statements:

H228 Flammable solid  
H260 In contact with water releases flammable gases which may ignite spontaneously  
H302+H332 Harmful if swallowed or if inhaled  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H400 Very toxic to aquatic life

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.  
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.  
P231+P232 Handle under inert gas. Protect from moisture.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/light/equipment.  
P261 Avoid breathing dust/fume/vapor.  
P264 Wash 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+P312+P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P302+P352 IF ON SKIN: Wash with soap and water  
P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.  
P332+P313 If skin irritation occurs: Get medical advice/attention  
P337+P313 If eye irritation persists get medical advice/attention  
P335+P334 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.  
P362 Take off contaminated clothing and wash 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:	2
Flammability:	1
Physical:	1

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### 3. Composition

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Chemical Family: Ceramic  
Additional Names: N/A

Lithium Phosphorus Sulfur Iodide (Li<sub>6</sub>PS<sub>5</sub>I):  
Percentage: 100 wt%  
CAS #: N/A  
EC #: N/A

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### 4. First Aid Procedures

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

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult. Keep victim warm. Seek medical attention.

Ingestion: Do NOT induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person. Seek medical attention.

Skin: Wash affected area with mild soap and water. Remove any contaminated clothing. Seek medical attention.

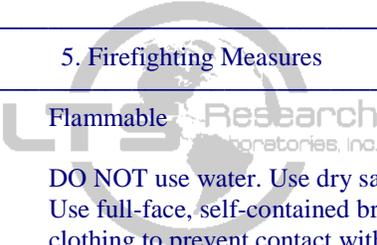
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

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### 5. Firefighting Measures

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Flammability:

Flammable  
LTS Research Laboratories, Inc.

Extinguishing Media: DO NOT use water. Use dry sand or dry extinguishing powder.

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. Remove all sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Avoid dust formation. Avoid breathing vapors, mist or gas. Evacuate personnel to safety. Do not flush with water.

Environmental Precautions: Isolate runoff to prevent environmental pollution. Do not let material enter drains. Avoid discharge into the environment.

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## 7. Handling and Storage

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Handling Conditions:	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Handle under dry protective gas. Wash thoroughly after handling. 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. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge.
Storage Conditions:	Store in a dark place. Store under dry inert gas, in a tightly sealed container, in a well-ventilated place. Never allow contact with water. 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: Threshold Limit Value:	1 mg/m <sup>3</sup> as P <sub>2</sub> S <sub>5</sub> , long-term value 1 mg/m <sup>3</sup> as P <sub>2</sub> S <sub>5</sub> , long-term value
Special Equipment:	Properly operating chemical fume hood with average face velocity of at least 100 feet per minute, designed for hazardous chemicals.
Respiratory Protection:	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Protective Gloves:	Nitrile rubber gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye Protection:	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Body Protection:	Complete suit protecting against chemical and flame retardant antistatic protective clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	N/A
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	N/A
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A g/cc
Molecular weight:	359.85 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Water, Oxidizing agents, Acids, Alcohols
Incompatible Conditions:	Light, Air, Water/ Moisture, Heat, Flames, Sparks
Hazardous Decomposition Products:	Metal oxide fume, Lithium oxide, Hydrogen Iodide, Sulphur oxides, Oxides of Phosphorus

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	Causes serious irritation
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: 389 mg/kg for rat by mouth as P<sub>2</sub>S<sub>5</sub>

Carcinogen: N/A

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## 12. Ecological Information

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Aquatic Toxicity:	Toxic
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

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## 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations. Contact a licensed professional waste disposal service to dispose of this material.

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## 14. Transportation Data

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Hazardous: Hazardous for transportation



Hazard Class:	4.3 Dangerous when wet
Secondary Class:	6.1 Toxic substances
Packing Group:	II
UN Number:	3134
Proper Shipping Name:	Water-reactive solid, toxic, n.o.s (Lithium Phosphorus Sulfur Iodide)

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## 15. Regulatory Information

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Sec 302 Extremely Hazardous:	N/A
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	N/A

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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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