LTS Research Laboratories, Inc.
Safety Data Sheet
Lithium Niobium Oxide

1. Product and Company Identification

Trade Name:	Lithium niobium oxide
Chemical Formula:	$LiNbO_3$
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)

2. Hazards Identification

Signal Word:	None
Hazard Statements:	None
Precautionary Statements:	None
HMIS Health Ratings (0-4):	
Health:	1
Flammability:	0
Physical:	0

3. Composition

Chemical Family:	Ceramic
Additional Names:	Lithium niobate
Lithium niobium oxide ($LiNbO_3$):	
Percentage:	100 wt%
CAS #:	12031-63-9
EC #:	234-755-4

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:	Seek Medical Attention.
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:	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.

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. 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:	N/A
Threshold Limit Value:	N/A
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.

9. Physical and Chemical Characteristics

Color	Off-white
Form:	Powder, Pieces, Granules, Sputtering Targets, etc.
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	1275 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	4.3 g/cc
Molecular weight:	147.85 g/mol

10. Reactivity

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

11. Toxicological Information

Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	Large amounts of lithium compounds may cause vomiting, diarrhea, ataxia, intestinal irritation, kidney injury, central nervous system depression and drop in blood pressure. Central nervous system effects may include, slurred speech, blurred vision, dizziness, sensory loss, convulsions and stupor. Chronic intake may cause neuromuscular effects such as tremor, ataxia, weakness, clonus and hyperactive reflexes. Lithium can cause kidney damage, gastrointestinal disturbances, fatigue, dehydration, weight loss, dermatological effects and thyroid damage. Lithium ion has shown teratogenic effects in rats and mice. Niobium compounds have caused liver damage in animal studies. Niobium metal has caused kidney damage in laboratory animals via intravenous route and fibrogenic effects in laboratory animals via intratracheal route. The Registry of Toxic Effects of Chemical Substances (RTEXS) reports the following effects in laboratory animals: Peripheral nerve and sensation- flaccid paralysis with appropriate anesthesia. Behavioral- tetany. Cardiac- arrhythmias (including changes in conducton)

Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	8000 mg/kg for rat by mouth
Carcinogen:	N/A

12. Ecological Information

Aquatic Toxicity:	N/A
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	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.

13. Disposal Considerations

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

14. Transportation Data

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

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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