

<a href="#">Lithium Niobate</a>	<a href="#">Pricing &gt;</a>
<a href="#">Lithium Niobate Sputtering Target</a>	<a href="#">Pricing &gt;</a>
<a href="#">Lithium Niobate Wafer</a>	<a href="#">Pricing &gt;</a>
<a href="#">Lithium Niobium Oxide</a>	<a href="#">Pricing &gt;</a>
<a href="#">NLO</a>	<a href="#">Pricing &gt;</a>

<b>Linear Formula</b>	LiNbO <sub>3</sub>
<b>Pubchem CID</b>	23665650
<b>MDL Number</b>	MFCD00011080
<b>EC No.</b>	234-755-4
<b>IUPAC Name</b>	lithium; oxido(dioxo)niobium
<b>Beilstein/Reaxys No.</b>	N/A
<b>SMILES</b>	[Li+].[O-][Nb] (=O)=O
<b>Inchi Identifier</b>	InChI=1S/Li.Nb .3O/q+1;;;;;-1
<b>Inchi Key</b>	GQYHUHYESMUTHG-UHFFFAOYSA-N
<b>Signal Word</b>	N/A
<b>Hazard Statements</b>	N/A
<b>Hazard Codes</b>	N/A
<b>Risk Codes</b>	N/A
<b>Safety Statements</b>	N/A
<b>RTECS Number</b>	QT9800000
<b>Transport Information</b>	NONH for all modes of transport
<b>WGK Germany</b>	3

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## SAFETY DATA SHEET

Date Accessed: 04/19/2024

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### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #12031-63-9

**Relevant identified uses of the substance:**

Scientific research and development

**Supplier details:**

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

**Emergency telephone number:**

Domestic, North America +1 800-424-9300  
International +1 703-527-3887

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**SECTION 2. HAZARDS IDENTIFICATION**

Classification of the substance or mixture

Classification according to Regulation (EC) No  
1272/2008

The substance is not classified as hazardous to health  
or the environment according to the CLP regulation.

Classification according to Directive 67/548/EEC or  
Directive 1999/45/EC

N/A

Information concerning particular hazards for human  
and environment:

No data available

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

N/A

Hazard pictograms

N/A

Signal word

N/A

Hazard statements

N/A

WHMIS classification

Not controlled

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

0

0

Health (acute effects) = 1

Flammability = 0

Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances

CAS No. / Substance Name:

12031-63-9 Lithium niobium oxide (Lithium niobate)

Identification number(s):

EC number: 234-755-4

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

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### **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Metal oxide fume

Lithium oxide

Advice for firefighters

Protective equipment:

Wear self-contained respirator.  
Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Do not allow product to enter drains, sewage systems, or other water courses.  
Do not allow material to penetrate the ground or soil.  
Methods and materials for containment and cleanup:  
Pick up mechanically.  
Prevention of secondary hazards:  
No special measures required.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling  
Precautions for safe handling  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Information about protection against explosions and fires:  
The product is not flammable  
Conditions for safe storage, including any incompatibilities  
Requirements to be met by storerooms and receptacles:  
No special requirements.  
Information about storage in one common storage facility:  
Store away from oxidizing agents.  
Further information about storage conditions:  
Keep container tightly sealed.  
Store in cool, dry conditions in well-sealed containers.  
Specific end use(s)  
No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

Not required.

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes)

No data available

Eye protection: Safety glasses

Body protection: Protective work clothing.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance:

Form: Crystalline solid

Color: Off-white

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 1275 °C (2327 °F)

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flash point: N/A  
Flammability (solid, gas): No data available.  
Ignition temperature: No data available  
Decomposition temperature: No data available  
Autoignition: No data available.  
Danger of explosion: Product does not present an explosion hazard.  
Explosion limits:  
Lower: No data available  
Upper: No data available  
Vapor pressure: N/A  
  
Density at 20 °C (68 °F): 4.3 g/cm<sup>3</sup> (35.884 lbs/gal)  
Relative density: No data available.  
Vapor density: N/A  
Evaporation rate: N/A  
Solubility in Water (H<sub>2</sub>O): No data available  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available  
Other information  
No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
No data available  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
No dangerous reactions known  
Conditions to avoid  
No data available  
Incompatible materials:  
Oxidizing agents  
Hazardous decomposition products:  
Lithium oxide  
Metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity: No effects known.  
LD/LC50 values that are relevant for classification:  
Oral LD50 8000 mg/kg (rat)

Skin irritation or corrosion: May cause irritation  
Eye irritation or corrosion: May cause irritation  
Sensitization: No sensitizing effects known.  
Germ cell mutagenicity: No effects known.  
Carcinogenicity:  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
Reproductive toxicity: No effects known.  
Specific target organ system toxicity - repeated exposure: No effects known.  
Specific target organ system toxicity - single exposure: No effects known.  
Aspiration hazard: No effects known.  
Subacute to chronic toxicity:  
Large amounts of lithium compounds may cause vomiting, diarrhea, ataxia, intestinal irritation, kidney injury, central nervous system depression and a 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.  
Subacute to chronic toxicity:  
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:  
Peripheral Nerve and Sensation - flaccid paralysis with appropriate anesthesia  
Behavioral - tetany.  
Cardiac - arrhythmias (including changes in conduction).  
Additional toxicological information:  
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity:  
No data available  
Persistence and degradability  
No data available  
Bioaccumulative potential

No data available  
Mobility in soil  
No data available  
Additional ecological information:  
Do not allow material to be released to the environment without official permits.  
Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A  
Other adverse effects  
No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation  
Consult official regulations to ensure proper disposal.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

Not a hazardous material for transportation.  
UN-Number  
DOT, IMDG, IATA  
None  
UN proper shipping name  
DOT, IMDG, IATA  
None  
Transport hazard class(es)  
DOT, ADR, IMDG, IATA  
Class  
None  
Packing group  
DOT, IMDG, IATA  
None  
Environmental hazards:  
N/A  
Special precautions for user  
N/A  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  
N/A  
Transport/Additional information:



Not dangerous according to the above specifications.  
DOT  
Marine Pollutant (DOT):  
No

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture  
National regulations  
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).  
SARA Section 313 (specific toxic chemical listings)  
Substance is not listed.  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer  
Substance is not listed.  
Prop 65 - Developmental toxicity  
Substance is not listed.  
Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
Other regulations, limitations and prohibitive regulations  
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring Authorisation for use)  
Substance is not listed.  
REACH - Pre-registered substances  
Substance is listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried out.

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

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