

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:Lithium Titanate, Spinel
Part No	: BTN-X-XXX
Brand	: Electrodesandmore
Supplier	: Battery Consulting 4020 Christopher way Plano TX 75024 USA
Telephone	: +1 877-394-3941
Fax	: +1 208-955-4890
Emergency Phone # (For both supplier and Manufacturer)	
	: +1 972-636-1722
Preparation Information: Battery Consulting	: +1 877-394-3941
Product Safety -	

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Harmful by ingestion., irritant

GHS Classification


Acute toxicity, Oral (Category 4)

Skin irritation, (Category 2

Eye irritation (Category 2A)

Specific target Organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram	
Signal word	Warning
Hazard statement(s)	
H302	Harmful if swallowed.
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation.
Precautionary statement(s)	
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P305 +P351 + P338	IN IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard	: 2
Flammability	: 0
Physical hazards	: 0

NFPA Rating	
Health hazard	: 2
Fire	: 0
Reactivity Hazard	: 0
Potential Health Effects	
Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Synonyms : LTO Nanopowder, Lithium Titanate

Component	Classification	Concentration
Lithium titanate Spinel Oxide		
CAS-No : 12031-95-7 EC-No. : NA		

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a Physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. Titanium/Titanium Oxides, Lithium Oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG.P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. 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).

Skin and body protection

Complete suit protecting against chemical. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : Powder



Color	: White
Safety data	
pH	No data available
Melting point/freezing point	>1000 C
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Auto ignition Temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapor pressure	no data available
Density	3.5g/cm ³ at 20 C(68F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapor Density	no data available
Odor	no data available
Odor Threshold	no data available
Evaporation rates	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

No Data Available

Materials to avoid

Oxidizing agents, Alcohols, organic solvents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. Titanium/Titanium Oxides, Lithium Oxids
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50	No data available
Inhalation LC50	No data available
Dermal LD50	No data available
Other information on acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity no data available

Teratogenicity no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):

Inhalation – May cause respiratory irritation

Specific target organ toxicity - repeated exposure (Globally Harmonized System) no data available

Aspiration hazard no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure

Dizziness, Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea., Weakness, Convulsions, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.



Synergistic effects no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity no data available

Persistence and degradability no data available

Bioaccumulative potential no data available

Mobility in soil no data available

PBT and vPvB assessment no data available

Other adverse effects no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US) Not dangerous goods.

IMDG Not dangerous goods.

IATA Not dangerous goods.

UN number: 1325 Class: 4.1 Packing group: II

15. REGULATORY INFORMATION

OSHA Hazards

Harmful by ingestion., irritant

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Accute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Lithium Titanate Spinel Oxide, CAS-No. 12031-95-7, Revision Date:

New Jersey Right To Know Components

Lithium Titanate Spinel Oxide, CAS-No. 12031-95-7, Revision Date:

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**Text of H-code(s) and R-phrase(s) mentioned in Section 3****Further information**

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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. Battery Consulting and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.electrodesandmore.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
