Material Safety Data Sheet

Version 1.1, Revision Date: July 25, 2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:Lithium Manganese Nickel Oxide
Part No	: BMN_HVHC**XX**
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 Product Safety -	: +1 877-394-3941

2.1 HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards **Carcinogen, Target Organ Effect, Skin sensitizer**

Target Organs **:** Nerves, Lungs

GHS Classification:

Skin sensitization	: Category 1
Carcinogenicity	: Category 2

HMIS Classification

Health hazard	: 2 (moderate)
Chronic Health Hazard	**: ***
Flammability	: 0
Physical hazards	: 0

NFPA Rating

Health hazard	: 2 (moderate)
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.

2.2 Label Elements

GHS Label Elements including precautionary statements

Pictogram(s) : 
Signal Word : Warning
Hazard Statement(s): H317 May cause an allergic skin reaction
H351 Suspected of causing cancer
Precautionary Statement(s):

P261 Avoid breathing dust / fume / gas / mist / vapors / spray
P280 Wear protective gloves, protective clothing, & eye protection
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water
P304 + P312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray

2.3 Other Hazards (not otherwise classified)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Lithium Manganese Nickel Oxide
Formula: : $Li(Mn_{0.85}Ni_{0.15})O_2$
Molecular Weight : 94.43/mol

Component	Classification	Concentration
Lithium manganese(III,IV) oxide		
CAS-No :12031-75-3		>98%

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
After Inhalation: Remove to fresh air. If not breathing give artificial respiration. Seek medical attention.
After Skin Contact: Wash with soap and copious amounts of water. Seek medical attention if irritation develops.
After Eye Contact: Immediately flush eyes copiously with water for at least 15 minutes. Seek medical attention.
After Swallowing: Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

No Data Available.

5. FIREFIGHTING MEASURES

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. Lithium Oxides, Manganese/Nickel oxides

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid dust formation. Avoid breathing vapors, mist or gas.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal..

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7. HANDLING AND STORAGE

Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control Parameters	Basis
Lithium Manganese Nickel Oxide	12031-5-3	C	5 mg/m3	USA. Occupational Exposure Limits (OSHA)-Table Z-1 Limits for air contaminants.
Remarks	Ceiling limit is to be determined from breathing-zone air samples.			
		TWA	0.2mg/m3	USA, ACGIH Threshold Limit Values (TLV)
	Central Nervous System impairment Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) varies			
		C	5mg/m3	USA. OSHA-TABLE Z-! Limits for Air Contaminants-1910.1000

		TWA	1mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95(US) or type P1 (EN 143) dust masks. 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
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
General Industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	: Powder
Color	: black

Safety data

pH	No data available
Melting point/freezing point	Melting point/range: 400°C(752°F)
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	no data available
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
Strong Oxidizing agents.

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. Lithium Oxides, Manganese/manganese oxides
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 a carcinogen or potential 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):
No data available

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

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of Pneumonia has been found in workers exposed to the dust or fume of some manganese compounds., Large doses of lithium ion have caused dizziness and prostration, and can cause lidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion.

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.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)	Not dangerous goods.
IMDG	Not dangerous goods.
IATA	Not dangerous goods.

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect

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
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Lithium Manganese (III,IV) oxide	12031-75-3	2016-07-26

SARA 311/312 Hazards
Chronic Health Hazard

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

Pennsylvania Right To Know Components
Lithium manganese nickell oxide, CAS-No. 12031-75-3 Revision Date 2016-07-26

New Jersey Right To Know Components
Lithium manganese Nickel oxide , 12031-75-3 Revision Date 2016-07-26

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

Further information

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.