

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: NANOMYTE® BE-30
 Product Description: Lithium Manganese Oxide powder
 CAS Number: 12057-17-9

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified Uses: Cathode material for lithium-ion batteries

1.3 Details of the Supplier of the Safety Data Sheet

Company: NEI Corporation
 Address: 400 Apgar Drive, Unit E – Somerset, NJ 08873 – United States of America
 Phone: +1 (732) 868-3141 Fax: +1 (732) 868-3143
 Email: productinfo@neicorporation.com

1.4 Emergency Telephone Number

Manufacturer: +1 (732) 868-3142 (9am to 6pm EST / UTC -0500)
 U.S. Poison Control Center: +1-800-222-1222

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not a hazardous substance or mixture

2.2 GHS Label elements, including precautionary statements

Hazard Statement(s):

Not a hazardous substance or mixture

Precautionary Statement(s):

P261 Avoid breathing dust / fume / gas / mist / vapors / spray
 P301 + P330 IF SWALLOWED: Rinse mouth
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water
 P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P402 + P404 Store in a dry place. Store in a closed container.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Component Name	Synonyms	Formula	CAS #	Concentration
Lithium Manganese Oxide	Lithium Manganate, LMO	LiMn ₂ O ₄	12057-17-9	≤ 100%

SECTION 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:

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

After Skin Contact:

Wash off with soap and plenty of water.

After Eye Contact:

Flush eyes with water as a precaution.

After Swallowing:

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

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

SECTION 5: FIREFIGHTING MEASURES

5.1 Suitable Extinguishing Media

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

5.2 Special Hazards Arising from the Substance or Mixture

Lithium oxides, Manganese/manganese oxides

5.3 Advice for Firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Other Information

No Data Available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

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

6.2 Environmental Precautions

Do not let product enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to Other Sections

For safe handling, see Section 7; for personal protection, see Section 8; for disposal, see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for Safe Storage (including any incompatibilities)

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

7.3 Specific End Uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

Components with workplace control parameters:

Components	CAS #	Value	Control Parameters	Basis
Lithium Manganese (III,IV) Oxide	12057-17-9	C	5 mg/m ³	USA Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
		ST	3 mg/m ³	USA. NIOSH Recommended Exposure Limits

Components	CAS #	Value	Control Parameters	Basis
Lithium Manganese (III,IV) Oxide	12057-17-9	TWA	1 mg/m ³	USA. NIOSH Recommended Exposure Limits
Remarks:	Ceiling limit is to be determined from breathing-zone air samples.			
Remarks:	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.			

8.2 Exposure Controls

Appropriate Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Personal Protective Equipment

Eye / Face Protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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.

Body Protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

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).

Control of Environmental Exposure

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical State:	Solid (powder)
Color:	Black
Odor:	Odorless
Odor Threshold:	No Data Available
pH:	No Data Available
Melting Point / Range:	400 °C (752 °F)
Boiling Point / Range:	No Data Available
Flash Point:	No Data Available
Evaporation Rate:	No Data Available
Flammability:	No Data Available
Upper Explosion Limit:	No Data Available
Lower Explosion Limit:	No Data Available
Vapor Pressure:	No Data Available
Vapor Density:	No Data Available
Relative Density:	No Data Available
Water Solubility:	No Data Available
Partition Coefficient:	No Data Available

Auto-ignition Temperature: No Data Available
Decomposition Temperature: No Data Available
Viscosity: No Data Available

9.2 Other Safety Information

None

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No Data Available

10.2 Chemical Stability

Stable under recommended storage conditions

10.3 Possibility of Hazardous Reactions

No Data Available

10.4 Conditions to Avoid

No Data Available

10.5 Incompatible Materials

Strong oxidizing agents

10.6 Hazardous Decomposition Products

Other Decomposition Products: No Data Available (in the event of fire: see Section 5)

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity

Oral LD50: No Data Available
Inhalation LC50: No Data Available
Dermal LD50: No Data Available
Other Information: 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 a 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)

Inhalation – May cause respiratory irritation

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No Data Available

Aspiration hazard

No Data Available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, & toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No Data Available

12.2 Persistence and Degradability

No Data Available

12.3 Bioaccumulative Potential

No Data Available

12.4 Mobility in Soil

No Data Available

12.5 PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other Adverse Effects

No Data Available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods – Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

13.2 Waste Treatment Methods – Contaminated Packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 Department of Transportation (DOT - US)

Not dangerous goods

14.2 International Maritime Dangerous Goods (IMDG)

Not dangerous goods

14.3 International Air Transport Association (IATA)

Not dangerous goods

14.4 Additional Transport Information

HS Code (first 6 digits) / HTS-US #: 2825.90.9000

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture**SARA 302 Components**

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:

<u>Component</u>	<u>CAS #</u>
Lithium Manganese Oxide	12057-17-9

SARA 311/312 Hazards

Chronic Health Hazard

The following product components are cited on the lists below:

<u>Component</u>	<u>CAS #</u>	<u>List Citations</u>
Lithium Manganese Oxide	12057-17-9	PA, NJ Right to Know

CALIFORNIA PROPOSITION 65

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

15.2 Chemical Safety Assessment

A chemical safety assessment was not carried out for this product.

SECTION 16: OTHER INFORMATION

HMIS Classification

Health Hazard: 0
Flammability Hazard: 0
Physical Hazard: 0

NFPA Rating

Health Hazard: 0
Flammability Hazard: 0
Reactivity Hazard: 0

Further Information

NEI has attempted to provide current and accurate information to the best of its knowledge. NEI makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, injury of any kind which may result from or arise out of the use of or reliance on the information by any person. Employers should use this information only as a supplement to other information gathered by them and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

- END OF MSDS -