

## SECTION 1: PRODUCT & COMPANY IDENTIFICATION

### 1.1 Product Identifiers

Product Name: NANOMYTE® BE-35  
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 <sub>2</sub> O <sub>4</sub>	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 <sup>3</sup>	USA Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		ST	3 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

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

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### 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

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### 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.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**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

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**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.

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**SECTION 14: TRANSPORT INFORMATION**

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**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

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**SECTION 15: REGULATORY INFORMATION**

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**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 -