

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: NANOMYTE® BE-80E

Product Description: Lithium Manganese Iron Phosphate Electrode Sheet

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

Identified Uses: Laboratory chemicals; Synthesis of substances; Research & development

1.3 Details of the Supplier of the Safety Data Sheet

Company: NEI Corporation

Address: 400 Apgar Drive, Unit E – Somerset, NJ 08873 – USA

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)

Carcinogenicity (Category 2B), H351

2.2 Label Elements

GHS Label Elements, including precautionary statements

Pictogram(s): 

Signal Word: Warning

Hazard Statement(s):

H351 Contains a component suspected of causing cancer

Precautionary Statement(s):

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves, protective clothing, & eye protection.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/ container to an approved waste disposal plant.

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

Combustible dust [Carbon Black]

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

| Component Name | Synonyms | Formula | CAS # | Weight % |
|--|-------------------|--|------------|-------------|
| Lithium Manganese Iron Phosphate | LMFP | LiMn _x Fe _(1-x) PO ₄ | n/a | 88% |
| Hazards: Not a hazardous substance or mixture | | | | |
| Carbon Black | Conductive Carbon | C | 1333-86-4 | 8% |
| Hazards: Carcinogenicity (Cat. 2, H351) | | | | |
| Poly(vinylidene fluoride) | PVDF | (C ₂ H ₂ F ₂) _x | 24937-79-9 | 4% |
| Hazards: Not a hazardous substance or mixture | | | | |
| Aluminum Foil Sheet | Aluminium | Al | 7429-90-5 | (substrate) |
| Hazards: Not a hazardous substance or mixture | | | | |

NANOMYTE® BE-80E (LMFP electrode sheet)

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice:

Move out of exposed area. Seek medical attention if irritation occurs. Show this SDS to the doctor in attendance.

After Inhalation:

If breathed in, move person into fresh air. If not breathing, give artificial respiration and seek medical attention.

After Skin Contact:

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

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. Consult a physician.

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

Oxides of phosphorus, Lithium oxides, Iron oxides, Carbon oxides, Hydrogen fluoride, Copper oxides, Manganese

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

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

6.2 Environmental Precautions

Do not let product enter drains.

6.3 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.

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

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Appropriate personal protective equipment should be used at all times. See Section 2.2

7.2 Conditions for Safe Storage (including any incompatibilities)

Store sealed, in a dry and well-ventilated place. Avoid contamination with incompatible materials (see Section 10.5)

7.3 Specific End Uses

A part 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:

| Component | CAS # | Value | Control Parameters | Basis |
|-----------------|--|-------|----------------------------|--|
| Carbon Black | 1333-86-4 | TWA | 3.5 mg/m ³ | OSHA Permissible Exposure Limit (PEL) |
| | | TWA | 3.5 mg/m ³ | NIOSH Recommended Exposure Limit (REL) |
| | | TWA | 0.1 mg PAHs/m ³ | NIOSH Recommended Exposure Limit (REL) (carbon black in the presence of PAHs) |
| Remarks: | Potential Occupational Carcinogen – Carbon black in presence of polycyclic aromatic hydrocarbons | | | |
| | | TWA | 3.5 mg/m ³ | (ACGIH) Threshold Limit Value (TLV) (inhalable particulate matter) |
| Remarks: | Bronchitis - Confirmed animal carcinogen with unknown relevance to humans | | | |

8.2 Exposure Controls

Appropriate Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Keep away from food and beverages. Remove all soiled and contaminated clothing immediately.

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.

Recommendation: Nitrile rubber, 0.11mm thick (full or splash contact).

Recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use. It should not be construed as offering an approval for any specific use scenario.

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.

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 (sheet) |
| Color: | Black |
| Odor: | No Data Available |
| Odor Threshold: | No Data Available |
| pH: | No Data Available |
| Melting Point / Range: | No Data Available |
| 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

No Data Available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No Data Available

10.2 Chemical Stability

Stable under recommended storage conditions (see Section 7.2)

10.3 Possibility of Hazardous Reactions

No Data Available

10.4 Conditions to Avoid

Avoid exposure to moisture and humidity

10.5 Incompatible Materials

Strong oxidizing agents, Chlorates, Nitrates

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

| Component | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|----------------------------------|---------------------|------------------------|-------------------|
| Lithium Manganese Iron Phosphate | No data available | No data available | No data available |
| Carbon Black | > 8,000 mg/kg (Rat) | > 3,000 mg/kg (Rabbit) | No data available |
| Poly(vinylidene fluoride) | > 6,000 mg/kg (Rat) | No data available | 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: Group 2B: Contains a component that is possibly carcinogenic to humans (carbon black)

- 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

Additional Information

RTECS: FF5800000 (carbon black)

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

| Component | Algae | Zebra Fish | Water Flea |
|----------------------------------|---|--|--|
| Lithium Manganese Iron Phosphate | No data available | No data available | No data available |
| Carbon Black | EC50: 10,000 mg/l - 72 h [OECD Test Guideline 201] | LC50: 1,000 mg/l - 96 h [OECD Test Guideline 203] | EC50: 5,600 mg/l - 24 h [OECD Test Guideline 202] |
| Poly(vinylidene fluoride) | No data available | No data available | 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 Results of PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment 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, clean residue from packaging (do not allow in drains), & dispose of properly.

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 Other

HS Classification #: 8507.90

Schedule B #: 8507.90.8000

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

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

Acute Health Hazard, Chronic Health Hazard

Right to Know Components

| <u>Component</u> | <u>CAS #</u> | <u>State</u> |
|---------------------------|--------------|------------------------|
| Poly(vinylidene fluoride) | 249347-79-9 | NJ, PA |
| Carbon Black | 1333-86-4 | MA, NJ, PA, MN, LA, CA |

CALIFORNIA PROPOSITION 65

This product contains a chemical known to the State of California to cause cancer: Carbon Black (CAS #1333-86-4)

Toxic Substances Control Act (TSCA) Chemical Substance Inventory

Components: Carbon Black (CAS #1333-86-4)

15.2 Chemical Safety Assessment

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

SECTION 16: OTHER INFORMATION

REACH Number

A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

Additional Notes

To our knowledge, the CAS number for Lithium Manganese Iron Phosphate ($\text{LiMn}_x\text{Fe}_{(1-x)}\text{PO}_4$) is unknown or has not been assigned to this material yet.

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 SDS –