

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: NANOMYTE® SSE-20

Product Description: Dichloromethane-based dispersion fluid for solid electrolyte materials

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

Identified Uses: Laboratory chemicals, Manufacture of substances

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 Numbers

Manufacturer: +1 (732) 868-3142 (9am to 6pm EST / UTC -0500)

U.S. Poison Control Center: +1-800-222-1222

ChemTel (North America): +1 (800) 255-3924 (during transportation only)

ChemTel (International): +1 (813) 248-0585 (during transportation only – collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Emergency Overview

The information in this SDS is related to the formulation ingredients of the material and may not reflect all the hazards of the product.

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

Acute toxicity, Oral (Category 3), H301 [LiTFSI]

Acute toxicity, Dermal (Category 3), H311 [LiTFSI]

Skin irritation (Category 2), H315 [DCM]

Eye irritation (Category 2A), H319 [DCM]

Carcinogenicity (Category 2), H351 [DCM]

Specific target organ toxicity - single exposure (Category 3), Respiratory and Central nervous system, H335, H336

Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, Blood, H373 [DCM]

Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Central nervous system, H373 [DCM]

2.2 Label Elements

GHS Label Elements, including precautionary statements

Pictogram(s): 

Signal Word: Warning

Hazard Statement(s):

H301 + H311: Toxic if swallowed or in contact with skin

H315: Causes skin irritation

H319: Causes serious eye irritation

H335: May cause respiratory irritation

H336: May cause drowsiness or dizziness

H351: Suspected of causing cancer

H373: May cause damage to organs (Liver, Blood) through prolonged or repeated exposure if swallowed

H373: May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled

Precautionary Statement(s):

- P201: Obtain special instructions before use
- P202: Do not handle until all safety precautions have been read and understood
- P260: Do not breathe dust/fume/gas/mist/vapors/spray
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area
- P280: Wear protective gloves, protective clothing, face protection & eye protection.
- P281: Use personal protective equipment as required.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 + P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313: IF exposed or concerned: Get medical advice / attention.
- P332 + P313: If skin irritation occurs: Get medical advice / attention.
- P337 + P313: If eye irritation persists: Get medical advice / attention.
- P362: Take off contaminated clothing and wash before reuse.
- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents / container to an approved waste disposal plant.

2.3 Other Hazards (not otherwise classified) or not covered in GHS

None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Component	Synonyms	Formula	CAS #	EC #	Wt. Percent
Dichloromethane ("DCM")	"DCM"	CH ₂ Cl ₂	75-09-2	200-838-9	98 – 99%
Hazard Classification: Skin Irrit. Cat. 2 (H315); Eye Irrit. Cat. 2A (H319); Carc. Cat. 2 (H351); STOT SE Cat. 3 (H335, H336); STOT RE Cat. 2 (H373)					
Proprietary Additives	n/a	n/a	n/a	n/a	1 – 2%
Hazard Classification: Not a hazardous substance					
Bis(trifluoromethane)sulfonamide lithium salt ("LiTFSI")	"LiTFSI"	C ₂ F ₆ LiNO ₄ S ₂	90076-65-6	415-300-0	< 1%
Hazard Classification: Acute Tox. Cat. 3 (H301+H311)					

For the full text of the H-Statements mentioned in this Section, see Section 16.

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:

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) To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. See section 8.1 for details.

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

Carbon oxides, hydrogen chloride gas, nitrogen oxides (NOx), sulphur oxides, hydrogen fluoride, lithium oxides

5.3 Advice for Firefighters

Wear full protective clothing and self-contained breathing apparatus approved for firefighting. Do not breathe smoke, gases, or vapors generated.

5.4 Further Information

No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For additional personal protection information, see Section 8.

6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment should be avoided.

6.3 Methods and Materials for Containment and Cleaning Up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to Other Sections

For disposal see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Appropriate personal protective equipment should be used at all times. Provide good ventilation or extraction. Avoid contact with eyes and skin. Avoid inhalation of vapor or mist. 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Heat sensitive. Store under inert gas. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects.

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
Dichloromethane	75-09-2	TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
	REMARKS: Potential Occupational Carcinogen (Confirmed animal carcinogen with unknown relevance to humans)			
	Central Nervous System impairment, Carboxyhemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Substance listed; for more information see OSHA document 1910.1052 (See Table Z-2)			
Dichloromethane	75-09-2	PEL	25 ppm	OSHA Specifically Regulated Chemicals / Carcinogens
		STEL	125 ppm	OSHA Specifically Regulated
	1910.1052 - This section applies to all occupational exposures to methylene chloride (MC) Chemical Abstracts Service Registry Number 75-09-2, in general industry, construction and shipyard employment. Methylene chloride (MC) means an organic compound with chemical formula, CH ₂ Cl ₂ . Its Chemical Abstracts Service Registry Number is 75-09-2. Its molecular weight is 84.9 g/mole OSHA specifically regulated carcinogen			

Biological occupational exposure limits

Components	CAS #	Parameters	Value	Biological Specimen	Basis
Dichloromethane	75-09-2	Dichloromethane	0.3000 mg/l	Urine	ACGIH – Biological Exposure Indices (BEI)
	REMARKS: End of shift (As soon as possible after exposure ceases)				

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.

Personal Protective Equipment

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye / Face Protection:

Face shield and/or safety glasses should be worn. Use eye protection equipment that is tested and approved under appropriate government standards such as NIOSH (US) or EN 166(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.

Skin and Body Protection:

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

Control of Environmental Exposure

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

- Form: Liquid
- Color: Colorless
- Odor: No data available
- pH (20 °C): No Data Available

Melting point/range:	-97 °C (-143 °F)
Specific Gravity:	No data available
Relative Density:	No data available
Bulk Density:	No data available
Viscosity:	No data available
Boiling Point:	39.8 – 40 °C (103.6 – 104 °F)
Flashpoint:	No data available
Ignition Temperature:	556.1 °C (1,033.0 °F)
Auto-ignition Temperature:	662.0 °C (1,223.6 °F)
Lower Explosion Limit:	12% (V)
Upper Explosion Limit:	19% (V)
Vapor Pressure (20 °C):	470.9 hPa (353.2 mmHg)
Vapor Density:	2.93 (Air = 1.0)
Water Solubility:	Slightly soluble
Evaporation Rate:	0.71
Decomposition Temperature:	No data available

9.2 Other 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)

Contains the following stabilizer(s): 2-Methyl-2-butene (>0.005 - <0.015 %)

10.3 Possibility of Hazardous Reactions

No Data Available

10.4 Conditions to Avoid

Heat, flames and sparks. Exposure to sunlight.

10.5 Incompatible Materials

Alkali metals, aluminum, strong oxidizing agents, bases, amines, magnesium, strong acids & bases, vinyl compounds

10.6 Hazardous Decomposition Products

In the Event of Fire: See Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects (of DCM)

Acute Toxicity

Oral LD50: > 2,000 mg/kg (rat)

Inhalation LC50: 52,000 mg/m³ (rat)

Dermal LD50: > 2,000 mg/kg (rat)

Other Information: No Data Available

Skin corrosion/irritation

Skin – rabbit (Irritating to skin – 24h (Draize Test))

Serious eye damage/eye irritation

Eyes – rabbit (Irritation to eyes – 24h (Draize Test))

Respiratory or skin sensitization

No Data Available

Germ cell mutagenicity

Rat – DNA damage

Carcinogenicity

Rat – Inhalation (Tumorigenic: Carcinogenic by RTECS criteria)

Rat – Inhalation (Endocrine: Tumors)

Limited evidence of carcinogenicity in animal studies; suspected human carcinogen.

IARC: 2B - Group 2B: Possibly carcinogenic to humans

NTP: Reasonably anticipated to be a human carcinogen

OSHA: OSHA specifically regulated carcinogen

Reproductive toxicity

No Data Available

Teratogenicity

No Data Available

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

Central Nervous System: Inhalation may cause respiratory irritation.

Liver / Blood: Ingestion may cause drowsiness or dizziness.

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

Central Nervous System: Inhalation may cause damage to organs through prolonged or repeated exposure.

Liver / Blood: Ingestion may cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No Data Available

Additional Information

RTECS: PA8050000 [Dichloromethane]

Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood. Acts as a simple asphyxiant by displacing air; anesthetic effects; difficulty in breathing; headache; dizziness. Prolonged or repeated contact with skin may cause: defatting, dermatitis. Contact with eyes can cause: redness, blurred vision, provokes tears. Effects due to ingestion may include: gastrointestinal discomfort, central nervous system depression, paresthesia, drowsiness, convulsions, conjunctivitis, and pulmonary edema. Effects may be delayed. Irregular breathing, stomach/intestinal disorders, nausea, vomiting, increased liver enzymes, weakness. Heavy or prolonged skin exposure may result in the absorption of harmful amounts of material and abdominal pain.

Stomach - Irregularities - Based on Human Evidence

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to Fish (LC50): Pimephales promelas (fathead minnow) - 193.00 mg/l - 96 h

Toxicity to Fish (NOEC): Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates (EC50): Daphnia magna (Water flea) - 1,682.00 mg/l - 48 h

Toxicity to algae: No Data Available

12.2 Persistence and Degradability

Biodegradability Result: < 26 % - Not readily biodegradable (OECD Test Guideline 301C)

12.3 Bioaccumulative Potential

Biodegradability Result: Does not bioaccumulate

Right to Know Components (continued)

<u>Component</u>	<u>CAS #</u>	<u>List Citations</u>
Bis(trifluoromethane)sulfonimide lithium salt	90076-65-6	PA, NJ Right to Know

CALIFORNIA PROPOSITION 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

<u>Component</u>	<u>CAS #</u>
Dichloromethane	75-09-2

15.2 Chemical Safety Assessment

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

SECTION 16: OTHER INFORMATION

Full Text of H-Statements referred to under Section 3

"Acute Tox": Acute toxicity	"STOT SE": Specific target organ toxicity, single exposure
"Card.": Carcinogenicity	"STOT RE": Specific target organ toxicity, repeated exposure
"Cat.": Category	"Skin Irrit.": Skin irritation
"Eye Irrit.": Eye irritation	"Wt. Percent": Weight percent

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.

HMIS Classification

Health Hazard:	2
Flammability Hazard:	0
Physical Hazard:	0

NFPA Rating

Health Hazard:	2
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 SDS –