

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: NANOMYTE® MEND 1000 (Part A)

CAS Number: A CAS number has not been assigned to this material.

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

This product is intended for use as a self-healing coating for plastics, metals, and other surfaces.

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

Website: www.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

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

Flammable liquids (Category 2), H225

Eye irritation (Category 2B)

Reproductive toxicity (Category 2), H361

Skin irritation (Category 2), H315

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

Specific target organ toxicity - repeated exposure (Category 2), H373

Aspiration hazard (Category 1), H304

Acute aquatic toxicity (Category 2), H401

2.2 GHS Label elements, including precautionary statements

Pictogram(s):



Signal Word: Danger

Hazard Statement(s):

H225 Highly flammable liquid and vapor

H319 Causes serious eye irritation

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H301 + H311 + H331 Toxic if swallowed, in contact with skin, or if inhaled

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

H401 Toxic to aquatic life

Precautionary Statement(s):

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P210 Keep away from heat / sparks / open flames / hot surfaces — no smoking
- P260 Do not breathe dust / fume / gas / mist / vapors / spray
- P264 Wash hands thoroughly after handling
- P273 Avoid release to the environment
- P280 Wear protective gloves, protective clothing, eye protection, face protection
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P303 + P361 + P353 IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower.
- 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell
- P308 + P313 If exposed or concerned: Get medical advice/attention.
- P332+P313 IF SKIN irritation occurs: 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
- P412 Store at temperatures not exceeding 5 °C / 41 °F. Keep cool.
- P501 Dispose of contents/ container to an approved waste disposal plant.

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

None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Component Name	Formula	CAS #	Concentration
Toluene	C ₇ H ₈	108-88-3	50 – 55 wt%
Polyester Polyol	C ₂₈ H ₄₄ O ₁₂	67815-82-1	35 - 40 wt%
2-Methoxy-1-Methylethyl Acetate (PGMEA)	C ₆ H ₁₂ O ₃	108-65-6	10 – 15 wt%
NEI Proprietary Resin	n/a	n/a	< 1 wt%

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. If breathing is difficult, give oxygen. Seek immediate medical attention.

After Skin Contact:

Wash off with soap and plenty of water. Seek medical attention.

After Eye Contact:

Immediately flush eyes copiously with water for at least 15 minutes. Seek medical attention.

After Swallowing:

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek

immediate medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

The most important known symptoms and effects are described in section 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

Hazardous decomposition products that may be formed under fire conditions: Carbon oxides, oxides of nitrogen, dense black smoke, other undetermined compounds

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 Other Information

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat, sparks, open flame, or hot surfaces. No smoking.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Use personal protective equipment. Ensure adequate ventilation. Avoid breathing vapors, mist, or gas. Keep unprotected persons away. Eliminate all sources of ignition or overheating. Beware of vapors accumulating to form explosive concentrations. Ventilate area and wash spill site after material pickup is complete.

6.2 Environmental Precautions

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

6.3 Methods and Materials for Containment and Cleaning Up

Dike area to prevent spreading. Absorb on vermiculite, sand or other inert absorbing material. Dispose of as a chemical waste in accordance with current local, state and federal regulations.

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

Appropriate personal protective equipment should be used at all times. Provide good ventilation or extraction. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapor or mist. Keep away from heat, sparks, flames and other sources of ignition.

7.2 Conditions for Safe Storage (including any incompatibilities)

Avoid contamination with incompatible materials. Keep away from heat, sparks, flames and other sources of ignition. Residual vapors might explode on ignition. Do not apply heat, cut, drill, and grind or weld on or near this container.

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

Component	CAS #	Value	Control Parameters	Basis
PGMEA	108-65-6	TWA	50 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

Component	CAS #	Value	Control Parameters	Basis
Toluene	108-88-3	TWA	100 ppm 375 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	150 ppm 560 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	20 ppm	USA. ACGIH Threshold Limit Values (TLV)
		TWA	100 ppm 375 mg/m ³	USA. NIOSH Recommended Exposure Limits
		ST	150 ppm 560 mg/m ³	USA. NIOSH Recommended Exposure Limits

Remarks: Visual impairment; Female reproductive; Pregnancy loss; 2015 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section); Not classifiable as a human carcinogen

8.2 Exposure Controls

Appropriate Engineering Controls

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

Personal Protective Equipment

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with appropriate 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 chemical resistant 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 after use.

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 (of components with known values)

Components:	<u>Toluene</u>	<u>Polyester Polyol</u>	<u>PGMEA</u>
Form:	Liquid	No Data Available	Liquid
Color:	Colorless	No Data Available	No Data Available
Odor:	Sweet, pungent	No Data Available	No Data Available
pH:	No Data Available	No Data Available	No Data Available
Melting Point / Range:	-95 °C (-139 °F)	No Data Available	< -67 °C (-88.6 °F)
Initial Boiling Point / Range:	111 °C (232 °F)	295°C @ 760mmHg	146 °C (294.8 °F)
Flashpoint:	4 °C (39.2 °F)	139.7 °C (283.5 °F)	42 °C (107.6 °F)
Evaporation Rate:	No Data Available	No Data Available	No Data Available
Flammability (solid, gas):	No Data Available	No Data Available	No Data Available

(cont.)	<u>Toluene</u>	<u>Polyester Polyol</u>	<u>PGMEA</u>
Upper Explosion Limit:	7.1 % (V)	No Data Available	13.1 % (V)
Lower Explosion Limit:	1.1 % (V)	No Data Available	1.3 % (V)
Vapor Pressure:	2.8 kPa (@ 20 °C)	No Data Available	0.5 kPa (@ 20 °C)
Vapor Density:	3.2 (Air = 1)	No Data Available	4.6 (Air = 1)
Relative Density:	0.87 g/mL @ 20 °C (68 °F)	No Data Available	0.96 g/mL
Water Solubility:	0.52 g/l @ 20 °C - insoluble	No Data Available	198 g/l at 20 °C (68 °F)
Auto-ignition Temperature:	480 °C (896 °F)	No Data Available	333 °C (631 °F) @ 760 mmHg
Decomposition Temperature:	No Data Available	No Data Available	No Data Available
Viscosity:	0.590 cP (@ 20 °C)	No Data Available	1.13 mm ² /s
Explosive Properties:	No Data Available	No Data Available	> 42°C explosive vapour/air

9.2 Other Information

Solids Content: 35 – 40%

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

Vapors may form explosive mixture with air

10.4 Conditions to Avoid

Heat, flames and sparks

10.5 Incompatible Materials

Strong oxidizing agents, reducing agents, peroxides, strong acids & bases

10.6 Hazardous Decomposition Products

In case of fire, see Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects (of components with known values)

Acute Toxicity	<u>Toluene</u>	<u>Polyester Polyol</u>	<u>PGMEA</u>
Oral LD50:	5,580 mg/kg (Rat)	2,500 mg/kg (Rat)	8,532 mg/kg (Rat)
Inhalation LC50:	12,500 - 28,800 mg/m ³ (Rat - 4h)	No Data Available	No Data Available
Dermal LD50:	12,196 mg/kg (Rabbit)	No Data Available	2,000 mg/kg (Rabbit)
Skin corrosion/irritation	Skin – Rabbit (24h) Result: Skin irritation	Skin – Rabbit (8h) Result: Mild irritation	Skin – Rabbit Result: No skin irritation
Serious eye damage/eye irritation	Eyes – Rabbit Result: No eye irritation	No Data Available	Eyes – Rabbit Result: No eye irritation
Respiratory or skin sensitization	No Data Available	No Data Available	Maximisation Test (GPMT) - Guinea pig Result: No sensitization
Germ cell mutagenicity	Rat - Liver DNA damage	No Data Available	reverse mutation assay - S. typhimurium Result: negative

Carcinogenicity

- IARC:** 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Toluene)
- 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 (Toluene only)

- Damage to fetus possible - Suspected human reproductive toxicant
- Reproductive toxicity - Rat - Inhalation
- Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Experiments have shown reproductive toxicity effects in male and female laboratory animals.
- Developmental Toxicity - Rat - Oral
- Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Teratogenicity

No Data Available

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

- Toluene:** Eyes, Respiratory Tract, Central Nervous System
- PGMEA:** Eyes, Skin, Respiratory Tract, Central Nervous System

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

- Toluene:** Skin, Central Nervous System
- PGMEA:** Defats the skin

Aspiration hazard

Toluene: May be fatal if swallowed and enters airways.

Additional Information

- Toluene** (RTECS: XS5250000)
- Lung irritation, chest pain, pulmonary edema; Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals; Central nervous system
- Stomach - Irregularities - Based on Human Evidence
- PGMEA** (RTECS: AI8925000)
- Eye, nose, throat and skin irritation; cough, sore throat; headache, nausea, dizziness, drowsiness; INGES. ACUTE: Abdominal pain, diarrhea; unconsciousness.

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity (of components with known values)

Toluene

- Toxicity to fish (LC50): Oncorhynchus mykiss (rainbow trout) - 7.63 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates (EC50): Daphnia magna (Water flea) - 8.00 mg/l - 24 h
- Immobilization EC50 - Daphnia magna (Water flea) - 6 mg/l - 48 h
- Toxicity to algae (EC50): Chlorella vulgaris (Fresh water algae) - 245.00 mg/l - 24 h
- Pseudokirchneriella subcapitata (green algae) - 10.00 mg/l - 24 h

Polyester Polyol

- Toxicity to fish (LC50): 161 mg/l (fathead minnow) - 96 hrs
- Toxicity to daphnia and other aquatic invertebrates (EC50): 408 mg/l (water flea) - 48 hrs

PGMEA

- Toxicity to fish (LC50): Salmo gairdneri - 100 - 180 mg/l - 96 h (OECD Test Guideline 203)
- Toxicity to daphnia and other aquatic invertebrates (EC50): Static Test - Daphnia magna (Water flea) - > 500 mg/l - 48 h
- Toxicity to algae (EC50): No Data Available

12.2 Persistence and Degradability

Toluene: Readily biodegradable

Polyester Polyol: Aerobic - Exposure time 8 d | Result: 100% - Readily biodegradable

PGMEA: Biotic / Aerobic - Exposure time 28 d | Result: 83% - Readily biodegradable

12.3 Bioaccumulative Potential

Toluene: Leuciscus idus (Golden orfe) - 3 d - 0.05 mg/l | Bioconcentration factor (BCF): 90

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

Toluene: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Product: Waste disposal should be in accordance with existing federal, state and local environmental control laws. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 Department of Transportation (DOT - US)

UN number: 1866 Class: 3 Packing Group: II
 Proper Shipping Name: Resin Solution

14.2 International Maritime Dangerous Goods (IMDG)

UN number: 1866 Class: 3 Packing Group: II
 Proper Shipping Name: Resin Solution

14.3 International Air Transport Association (IATA)

UN number: 1866 Class: 3 Packing Group: II
 Proper Shipping Name: Resin Solution

14.4 Other

HS Code (first 6 digits) / HTS-US #: 3208.90.0000

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 Name</u>	<u>CAS #</u>
Toluene	108-88-3

SARA 311/312 Hazards

<u>Component Name</u>	<u>CAS #</u>	<u>Hazards</u>
Toluene	108-88-3	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Polyester polyol	67815-82-1	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
PGMEA	108-65-6	Fire Hazard, Chronic Health Hazard

SARA 311/312 Hazards

The following product components are cited on the lists below:

<u>Component</u>	<u>CAS #</u>	<u>List Citations</u>
Toluene	108-88-3	MA, NJ, PA Right to Know
Polyester polyol	67815-82-1	MA, NJ, PA Right to Know
PGMEA	108-65-6	NJ, PA Right to Know

CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Component</u>	<u>CAS #</u>
Toluene	108-88-3

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.

HMIS Classification

Health Hazard:	2
Flammability Hazard:	3
Physical Hazard:	0

NFPA Rating

Health Hazard:	2
Flammability Hazard:	3
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.