SECTION 1: PRODUCT & COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: NANOMYTE® SAF-100 (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

Identified Uses: Anti-fog coating for plastics, glass, 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

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 – Methanol, Ethanol

Flammable Liquids (Category 3), H226 – 2-Butanol

Eye irritation (Category 2A), H319 – 2-Butanol, Ethanol

Acute toxicity, Oral (Category 3), H301 – Methanol

Acute toxicity, Dermal (Category 3), H311 – Methanol

Acute toxicity, Inhalation (Category 3), H331 – Methanol

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335 – 2-Butanol

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336 – 2-Butanol

Specific target organ toxicity - single exposure (Category 1), H370 – Methanol

2.2 GHS Label elements, including precautionary statements

Pictogram(s):

Signal Word: Danger

Hazard Statement(s):

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H319	Causes serious eye irritation
H301 + H311 + H331	Toxic if swallowed, in contact with skin, or if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H370	Causes damage to organs

Precautionary Statement(s):

P210	Keep away from heat / sparks / open flames / hot surfaces — no smoking

P233	Keep container tightly closed
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
P280	Wear protective gloves, protective clothing, eye protection, face protection
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention
P363	Wash contaminated clothing before reuse
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
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

May form explosive peroxides (2-Butanol)

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Component Name	Formula	CAS #	Concentration
Methanol	CH_3OH	67-56-1	2 – 4 %
2-Butanol	$C_4H_{10}O$	78-92-2	2 – 4 %
Ethanol	C_2H_6O	64-17-5	4 – 10 %
Proprietary Resin	n/a	n/a	20 – 30 %
Water	H_2O	7732-18-5	50 – 65 %

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 and seek immediate medical attention.

After Skin Contact:

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

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 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

Carbon oxides

5.3 Advice for Firefighters

Wear full protective clothing and self-contained breathing apparatus approved for firefighting

5.4 Other Information

Use water spray to cool unopened containers

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. 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)

For best coating performance, keep container tightly sealed and store in a dry and cool area. Avoid storage above 40°C / 104°F and contamination with incompatible materials. Keep away from heat, sparks, flames and other sources of ignition.

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 Name	CAS #	Concentration	Value	ACGIH (TLV)	OSHA (PEL)	NIOSH (REL)
Methanol	67-56-1	2 – 4 %	TWA	200 ppm 262 mg/m^3	200 ppm 260 mg/m^3	200 ppm 260 mg/m^3
2-Butanol	78-92-2	2 – 4 %	TWA	100 ppm 303 mg/m^3	150 ppm 450 mg/m^3	100 ppm 305 mg/m^3
Ethanol	64-17-5	4 – 10 %	TWA	1,000 ppm	1,000 ppm 1,900 mg/m^3	1,000 ppm 1,900 mg/m^3

Notes: PEL – Permissible Exposure Limit; **TLV** – Threshold Limit Values; **REL** – Recommended Exposure Limits

8.2 Exposure Controls

Appropriate Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. Keep away from food and beverages. Provide good ventilation or extraction. Safety shower and eye bath recommended. Wash hands before breaks & after workday.

Personal Protective Equipment

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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:	Water (50-65%)	Ethanol (4-10%)	2-Butanol (2-4%)	Methanol (2-4%)
Form:	Liquid, clear	Liquid, clear	Liquid, clear	Liquid, clear
Color:	Colorless	Colorless	Colorless	Colorless
Odor:	Odorless	Weak, ethereal, vinous	Strong, pleasant	Pungent
pH:	6.0 - 8.0 @ 25 °C	No data available	No data available	No data available
Melting / Freezing Point:	0.0 °C (32.0 °F)	-114 °C (-173 °F)	-115 °C (-175 °F)	-98 °C (-144 °F)
Initial Boiling Point / Range:	100 °C (212 °F)	78.3 °C (172.9 °F)	99.4 °C (211 °F)	64.7 °C (148.5 °F)
Flashpoint (closed cup):	Not applicable	14.0 °C (57.2 °F)	27 °C (81 °F)	9.7 °C (49.5 °F)
Evaporation Rate:	No data available	No data available	No data available	No data available
Flammability (solid, gas):	Not flammable	No data available	No data available	No data available
Upper Explosion Limit:	Not applicable	19 % (V)	9.8 % (V)	36 % (V)
Lower Explosion Limit:	Not applicable	3.3 % (V)	1.7 % (V)	6 % (V)
Vapor Pressure (20.0 °C):	17.5 mmHg	44.6 mmHg	11.5 mmHg	97.7 mmHg
Vapor Density:	0.804 g/L	No data available	2.56 (Air = 1.0)	1.11 (Air = 1.0)
Relative Density:	1.0 g/cm^3 @ 3.98 °C	0.789 g/mL at 20 °C	0.808 g/cm^3 at 25 °C	0.791 g/mL at 25 °C
Water Solubility:	Completely Miscible	Completely Soluble	Soluble	Completely Miscible
Auto-ignition Temperature:	Not applicable	363.0 °C (685.4 °F)	No data available	455.0 °C (851.0 °F)
Decomposition Temperature:	No data available	No data available	No data available	No data available
Viscosity:	0.890 cP @ 25 °C	No data available	No data available	No data available
Explosive Properties:	Not explosive	No data available	No data available	Not explosive

9.2 Other Information

No further information 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

Heat, flames and sparks

10.5 Incompatible Materials

Acid chlorides, acid anhydrides, oxidizing agents, alkali metals, reducing agents, acids, halogens, peroxides

10.6 Hazardous Decomposition Products

Other decomposition products: no data available; Under fire conditions: see Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute Toxicity	**Ethanol (4-10%)**	**2-Butanol (2-4%)**	**Methanol (2-4%)**
Oral LD50:	10,470 mg/kg (Rat)	2,193 mg/kg (Rat)	1,187 - 2,769 mg/kg (Rat)
Inhalation LC50:	30,000 mg/l (Rat - 4h)	No Data Available	128.2 mg/l (Rat - 4h)
Dermal LD50:	15,800 mg/kg (Rabbit)	2,000 mg/kg (Rabbit)	17,100 mg/kg (Rabbit)
Skin corrosion/irritation			
	Skin - Rabbit Result: No skin irritation - 24 h	Skin - Rabbit Result: No skin irritation - 4 h	Skin - Rabbit Result: No skin irritation
Serious eye damage/eye irritation			
	Eyes – Rabbit Result: Moderate eye irritation	No Data Available	Eyes – Rabbit Result: No eye irritation
Respiratory or skin sensitization			
	No Data Available	Maximisation Test (GPMT) - Guinea pig Result: No sensitization	Maximisation Test (GPMT) - Guinea pig Result: No sensitization
Germ cell mutagenicity			
	No Data Available	Ames test - S. typhimurium Result: negative	Ames test - S. typhimurium Result: negative

Carcinogenicity

Ethanol: Carcinogenicity - Mouse – Oral, Tumorigenic; Equivocal tumorigenic agent by RTECS criteria; Liver, Tumors, Blood, Lymphomas (including Hodgkin's disease).

IARC: Group 1: Carcinogenic to humans (ethanol in alcoholic beverages)

ACGIH: Group A3: Confirmed animal carcinogen with unknown relevance to humans (ethanol only)

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

Ethanol: Reproductive toxicity - Human - female – Oral; Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.

2-Butanol: Reproductive toxicity – Rat – Inhalation; Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Rat – Inhalation; Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Methanol: Damage to fetus not classifiable; Fertility classification not possible from current data.

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

Ethanol: No data available
2-Butanol: Respiratory system, central nervous system
Methanol: Causes damage to organs (liver, kidney)

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

No Data Available

Aspiration hazard

2-Butanol: Aspiration into the lungs may result in chemical pneumonitis

Additional Information

Ethanol (RTECS: KQ6300000)
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Symptoms of Short Term Exposure: The substance irritates the eyes. Inhalation of high concentration of vapor may cause irritation of the eyes and respiratory tract. The substance may cause effects on the central nervous system.
Symptoms of Long Term Exposure: The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration.
2-Butanol (RTECS: EO1750000)
Exposure Routes: inhalation, ingestion, skin and/or eye contact
Symptoms of Short Term Exposure: The substance is irritating to the eyes. Exposure far above the OEL could cause lowering of consciousness. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.
Symptoms of Long Term Exposure: The liquid defats the skin.
Methanol (RTECS: PC1400000)
Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
Symptoms of Short Term Exposure: The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the central nervous system, resulting in loss of consciousness.
Symptoms of Long Term Exposure: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system, resulting in persistent or recurring headaches and impaired vision.

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

The toxicological properties of this material have not been fully investigated.

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

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: III

Proper Shipping Name: Resin Solution, flammable

14.2 International Maritime Dangerous Goods (IMDG)

UN number: 1866 Class: 3 Packing Group: III

Proper Shipping Name: Resin Solution, flammable

14.3 International Air Transport Association (IATA)

UN number: 1866 Class: 3 Packing Group: III

Proper Shipping Name: Resin Solution, flammable

14.4 Additional Transport Information

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:

Component Name	CAS #
Methanol	67-56-1
2-Butanol	78-92-2

SARA 311/312 Hazards

Component Name	CAS #	Hazards
Methanol	67-56-1	Fire Hazard, Acute Health Hazard, Chronic Health Hazard
2-Butanol	78-92-2	Fire Hazard, Acute Health Hazard
Ethanol	64-17-5	Fire Hazard, Acute Health Hazard, Chronic Health Hazard

The following product components are cited on the lists below:

Component	CAS #	List Citations
Methanol	67-56-1	PA, MA, NJ Right to Know
2-Butanol	78-92-2	PA, MA, NJ Right to Know
Ethanol	64-17-5	PA, MA, NJ 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.

Component	CAS #
Methanol	67-56-1

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		NFPA Rating	
Health Hazard:	2	Health Hazard:	2
Flammability Hazard:	3	Flammability Hazard:	3
Physical 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.