SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

UST-SC(CLEAR)

Date of issue: 2025-09-15 Revision date: 2025-09-15 Version: 3.0

1. IDENTIFICATION

A. Product name

- UST-SC(CLEAR)

B. Recommended use and restriction on use

- General use : Surface treatment
- Restriction on use : Restricted for other purposes

C. Manufacturer / Supplier / Distributor information

- Company name : NOROO Coil Coating
- Address : 54, Jangheung-ro 39beon-gil, Nam-gu, Pohang-si, Gyeonsangbuk-do, Republic of Korea
- Emergency telephone number : 031-467-6114

2. HAZARD IDENTIFICATION

A. GHS Classification

- Acute toxicity (oral) : Category4
- Acute toxicity (dermal) : Category4
- Serious eye damage/irritation : Category2
- Skin sensitization : Category1
- Skin sensitization : Category1A
- Skin sensitization : Category1B
- Germ cell mutagenicity : Category1B
- Carcinogenicity : Category1A
- Carcinogenicity : Category1B
- Reproductive toxicity : Category1B
- Chronic aquatic toxicity : Category2
- Chronic aquatic toxicity : Category3

B. GHS label elements

○ Hazard symbols



○ Signal words

- Not applicable

○ Hazard statements

- H302 Harmful if swallowed
- H312 Harmful in contact with skin
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H340 May cause genetic defects
- H350 May cause cancer

- H360 May damage fertility or the unborn child
- H411 Toxic to aquatic life with long lasting effects
- H412 Harmful to aquatic life with long lasting effects

○ Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P281

2) Response

- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment (if in eyes, wash with plenty of running water; if in contact with skin, wash with plenty of running water; if inhaled, move to fresh air; if ingested, seek medical advice on whether to induce vomiting).
- P322 Take off contaminated clothing and wash before reuse.
- P330 Rinse mouth.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
- P362 Take off contaminated clothing and wash before reuse.
- P362+P364 Take off contaminated clothing and wash before reuse.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P363 Wash contaminated clothing before reuse.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Water	Aqua; Dihydrogen oxide	7732-18-5	60.7525 ~ 70.7525
Substituted alkene polymer with alkyl(C=3-5) methacrylate, alkyl(C=3-5) acrylate, alkenyl(C=1-4)carbomonocycle, alkyl(C=6-10) methacrylate, alkyl(C=1-3) methacrylate	Substituted alkene polymer with alkyl(C=3-5) methacrylate, alkyl(C=3-5) acrylate, alkenyl(C=1-4)carbomonocycle, alkyl(C=6-10) methacrylate, alkyl(C=1-3) methacrylate	-	11.907699999999998 ~ 21.9077

[3-(Methacryloxy)propyl]trimethoxysilane	2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester ; (g-Methacryloxypropyl)trimethoxysilane ; Methacryloxypropyltrimethoxysilane ; 3-Methacryloxypropyltrimethoxysilane ; 3-(Trimethoxysilyl)propyl methacrylate ; 3-Trimethoxysilylpropyl 2-methylprop-2-enoate ; Methacrylic acid, 3-(trimethoxysilyl)propyl ester ; Trimethoxy(3-methacryloxypropyl)silane ;	2530-85-0	0 ~ 7.0512
2-Propanol, 1-(2-butoxy-1-methylethoxy)-	2-Propanol, 1-(2-butoxy-1-methylethoxy)- ; 1-(2-Butoxy-1-methylethoxy)propan-2-ol ; 1-(2-Butoxy-1-methylethoxy)-2-propanol ; 1-(2-Butoxyisopropoxy)-2-propanol ; Dipropylene glycol butyl ether ; Butoxydipropyleneglycol ; 1-(1-Butoxy-2-propoxy)-2-propanol ;	29911-28-2	0 ~ 7.0461
1-Ethylpyrrolidin-2-one	2-Pyrrolidinone, 1-ethyl- ; N-Ethylpyrrolidinone ; 1-Ethyl-2-pyrrolidinone ; N-Ethylpyrrolidone ; 1-Ethylpyrrolidin-2-one ; 1-Ethyl 2-Pyrrolidinone ; 1-Ethyl-2-pyrrolidone ; 1-Ethylazacyclopentan-2-one ; N-Ethyl-a-pyrrolidinone ; N-Ethyl-g-butyrolactam ;	2687-91-4	0 ~ 5.8658
Chromium trioxide	Chromium trioxide ; CHROMIUM (III) OXIDE ; Chromium (IV) Oxide ; Chromium(VI) oxide ; Chromia ; Chromic anhydride ; Chromic trioxide ; Chromic acid ; Chromic acid anhydride ; Monochromium trioxide	1333-82-0	0 ~ 5.4486
Ammonium hydroxide	Ammonia, solution, with more than 35% but not more than 50% ammonia ; Ammonium hydrate ; Ammonia, aqueous solution ; Ammonium hydroxide ; Azanium hydroxide ; Ammonium hydroxide ((NH4)(OH)) ; AMMONIA SOLUTION, STRONG ; AQUA AMMONIA	1336-21-6	0 ~ 5.3092
Ammonia	Ammonia, anhydrous ; Ammonia gas ; Anhydrous ammonia ; Aqua ammonia ; Liquid ammonia ; Nitro-sil ; Azane ;	7664-41-7	0 ~ 5.2275
Tetrafluoroethene homopolymer	POLYTETRAFLUOROETHYLENE	9002-84-0	0 ~ 5.1546
Dipropylene glycol methyl ether	Propanol, 1(or 2)-(2-methoxymethylethoxy)- ; Dipropyleneglycol monomethyl ether ; Propanol, (2-methoxymethylethoxy)- ; 2-(2-Methoxypropoxy)propan-1-ol ; Methyl dipropasol ; Oxybispropanol methyl ether	34590-94-8	0 ~ 5.099
Poly(oxy-1,2-ethanediyl), α-sulfo-ω-(nonylphenoxy)-, ammonium salt (1:1)	Poly(oxy-1,2-ethanediyl),a-sulfo-w-(nonylphenoxy)-, ammonium salt(1:1)	9051-57-4	0 ~ 5.018
Polyethylene	Polyethylene wax	9002-88-4	0 ~ 5.0144

Methanol	Wood alcohol ; Methyl alcohol ; Monohydroxymethane ; Methyl hydroxide ; Methyl hydrate ; Methyl hydrid ; Wood naphtha ;	67-56-1	0 ~ 5.0103
α-Octadecyl-ω-hydroxypoly(oxy-1,2-ethanediyl)	Emalex630	9005-00-9	0 ~ 5.0054

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contaminated clothing, shoes and isolate.
- Wash thoroughly after handling.
- Wear gloves when washing the patient, and please avoid contact with contaminated clothing.

C. Inhalation contact

- Take specific treatment if needed.
- When exposed to large amounts of steam and mist, move to fresh air.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- Causes serious eye irritation
- Harmful if swallowed
- Harmful in contact with skin
- Harmful to aquatic life with long lasting effects
- May cause an allergic skin reaction

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.

- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.
- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act
- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ ACGIH TLV

- [Chromium trioxide] : TWA 0.0002 mg/m3, STEL 0.0005 mg/m3
- [Ammonia] : TWA, 25 ppm (17 mg/m3) STEL, 35 ppm (24 mg/m3)
- [Dipropylene glycol methyl ether] : TWA 50 ppm
- [Methanol] : TWA, 200 ppm (262 mg/m3) STEL, 250 ppm (328 mg/m3) Skin

○ OSHA PEL

- [Chromium trioxide] : 5.0 ug/m3, 2.5 ug/m3 Action Level
- [Chromium trioxide] : 1 mg/m3
- [Ammonia] : 50 ppm, 35 mg/m3
- [Dipropylene glycol methyl ether] : 100 ppm, 600 mg/m3
- [Methanol] : 200 ppm, 260 mg/m3

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

○ Respiratory protection

- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Consider warning properties before use.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Respiratory protection is ranked in order from minimum to maximum.
- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

○ Eye protection

- Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.

○ Hand protection

- Wear appropriate chemical resistant glove.

○ Skin protection

- Wear appropriate chemical resistant protective clothing.

○ Others

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	Yellow opaque
B. Odor	Specific Odor
C. Odor threshold	No data
D. pH	9.5
E. Melting point/Freezing point	No data
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	1000℃
H. Evaporation rate	No data
I. Flammability(solid, gas)	No data
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	No data
L. Solubility	No data
M. Vapour density	No data
N. Specific gravity(Relative density)	1.00~1.04
O. Partition coefficient of n-octanol/water	No data
P. Autoignition temperature	No data
Q. Decomposition temperature	No data
R. Viscosity	8~12(F/C#4,25℃)
S. Molecular weight	No data

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

○ Respiratory tracts

- Not available

○ Oral

- Harmful if swallowed

○ Eye·Skin

- Causes serious eye irritation
- May cause an allergic skin reaction

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ Acute toxicity

* Oral
  - Product (ATEmix) : >5000mg/kg
  - [Water] : LD50 > 90000 ㎎/㎏ Rat (LD50 > 90 ml/kg) (HSDB)
  - [[3-(Methacryloxy)propyl]trimethoxysilane] : LD50 >2000 mg/kg Rat (OECD 423, GLP) (ECHA)
  - [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : LD50 = 2160 ㎎/㎏ Rat (TOMES)
  - [1-Ethylpyrrolidin-2-one] : LD50 1350 mg/kg Rat (Thomson)
  - [Chromium trioxide] : LD50 80 mg/kg Rat (NICS)
  - [Ammonium hydroxide] : LD50 350 mg/kg Rat (HSDB)
  - [Dipropylene glycol methyl ether] : LD50 5660 ㎎/㎏ Rat (OECD Guideline 401, ECHA)
  - [Polyethylene] : LD50 > 2000 mg/kg Rat (NCIS)
  - [Methanol] : LD50 50~300 mg/kg Rat (NIER)
  - [α-Octadecyl-ω-hydroxypoly(oxy-1,2-ethanediyl)] : LD50 1900 ㎎/㎏ Rat

* Dermal
  - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
  - [[3-(Methacryloxy)propyl]trimethoxysilane] : LD50 > 2000 ㎎/㎏ Rat (OECD TG 402, GLP) (ECHA)
  - [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : LD50 > 2000 ㎎/㎏ Rat (IUCLID)
  - [1-Ethylpyrrolidin-2-one] : LD50 > 2000 mg/kg Rat (OECD Guideline 402, GLP) (ECHA)
  - [Chromium trioxide] : LD50 30 mg/kg Rabbit (NICS)
  - [Dipropylene glycol methyl ether] : LD50 9510 mg/kg Rat (OECD Guideline 402, ECHA)
  - [Methanol] : LD50 200~1000 mg/kg (NIER)

* Inhalation
  - Product (ATEmix) : >50.0mg/L, Vapour, 4hr
  - [[3-(Methacryloxy)propyl]trimethoxysilane] : Aerosol LC50 > 2.28 mg/L 4 hr Rat No death Not classified (OECD TG 403) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : aerosol LC0 > 5.4 mg/L Rat Not classified (ECHA)

- [1-Ethylpyrrolidin-2-one] : Aerosol LC50 > 5.1 mg/L 4 hr Rat No death Not classified (OECD Guideline 403, GLP) (ECHA)

- [Chromium trioxide] : Aerosol 0.217 mg/L 4 hr Rat (NICS)

- [Ammonium hydroxide] : Gas LC50 2000ppm 4hr Rat (NICS)

- [Ammonia] : Gas LC50 2000 ppm 4 hr Rat (NICS)

- [Dipropylene glycol methyl ether] : Vapor LC0 >500 ppm(3.1 mg/L) 7hr(661 ppm(4.1 mg/L) 4hr) Rat (OECD Guideline 403)GHS Not classified (ECHA)

- [Polyethylene] : Dust LC50 604 mg/L 4 hr (75.5 mg/L 30 min) Rat (RTECS)

- [Methanol] : Vapor LC50 2~10 mg/L 4 hr (NIER)

○ Skin corrosion/irritation

- Not available

○ Serious eye damage/irritation

- Causes serious eye irritation

○ Respiratory sensitization

- Not available

○ Skin sensitization

- May cause an allergic skin reaction

○ Carcinogenicity

* IARC

- [Chromium trioxide] : Group 1

- [Tetrafluoroethene homopolymer] : Group 3

- [Polyethylene] : Group 3

* OSHA

- Not available

* ACGIH

- [Chromium trioxide] : A1_Cr(VI)

* NTP

- [Chromium trioxide] : K

* EU CLP

- [Chromium trioxide] : Carc. 1A

○ Germ cell mutagenicity

- May cause genetic defects

○ Reproductive toxicity

- May damage fertility or the unborn child

○ STOT-single exposure

- Not available

○ STOT-repeated exposure

- Not available

○ Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ Fish

- [[3-(Methacryloxy)propyl]trimethoxysilane] : LC50 >100 mg/L 96h Danio rerio (EU Method C.1, GLP) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : LC50 = 841 ㎎/ℓ 96 hr Poecilia reticulata (SIDS)

- [Chromium trioxide] : LC50 58.5 mg/L 96 hr Danio rerio (Read across CAS No. 7778-50-9), NOEC 10 mg/L 40 d

Oryzias latipes (OECD TG 210) (ECHA)

- [Ammonium hydroxide] : LC50 0.44 mg/L 96hr Cyprinus carpio (NICS)

- [Ammonia] : LC50 0.5 mg/L 96hr Lepomis cyanellus, NOEC ca. 0.0135 mg NH3/L 73d Oncorhynchus mykiss (ECHA)

- [Dipropylene glycol methyl ether] : LC50 >1000 ㎎/ℓ 96 hr Other(Poecilia reticulata, OECD Guideline 203, GLP)(ECHA)

- [Methanol] : LC50 15400 mg/L 96 hr Bluegill (NITE), NOEC 15800 mg/L 200 hr Oryzias latipes (ECHA)

○ Crustaceans

- [[3-(Methacryloxy)propyl]trimethoxysilane] : EC50 >100 mg/L 48h Daphnia magna (EU Method C.2, GLP) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : LC50 = 1000 ㎎/ℓ 48 hr Daphnia magna (SIDS)

- [Chromium trioxide] : EC50 0.112 mg/L 48 hr Daphnia magna, NOEC 0.018 mg/L 21 d Daphnia magna (NICS)

- [Ammonium hydroxide] : LC50 0.66 mg/L 48 hr Daphnia magna (NICS)

- [Ammonia] : LC50 101 mg/L 48hr Daphnia magna (ASTM E729-80)NOEC 0.79 mg/L 21 d Daphnia magna (Read-across 12125-02-9) (EPA OPPTS 850.1300) (ECHA)

- [Dipropylene glycol methyl ether] : LC50 1919 ㎎/ℓ 48 hr Daphnia magna(OECD Guideline 202) (ECHA)

- [Methanol] : LC50 1340 mg/L 96hr Brown shrimp (NITE), EC50 18260 mg/L 96 hr Daphnia magna (OECD TG 202) (ECHA)

○ Algae

- [[3-(Methacryloxy)propyl]trimethoxysilane] : EC50 > 100 mg/L, NOEC >= 100 mg/L 72hr Desmodesmus subspicatus (EU Method C.3, GLP) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : EC50 = 556.4 ㎎/ℓ 96 hr (SIDS)

- [Chromium trioxide] : EC50 0.21 ~ 0.36 mg/L 72 hr S. subspicatus (NICS)

- [Ammonia] : NOEC ≥ 15 mg/L 72hr (Read-across 12125-02-9) (OECD TG 201) (ECHA)

- [Dipropylene glycol methyl ether] : EC50 >969 ㎎/ℓ 96 hr Selenastrum capricornutum(OECD Guideline 201, GLP), NOEC(72h)= 969mg/L(OECD Guideline 201 ,GLP) (ECHA)

- [Methanol] : EC50 22000 mg/L 96 hr Raphidocelis subcapitata (OECD TG 201) (ECHA)

B. Persistence and degradability

○ Persistence

- [Water] : log Kow -1.38 (HSDB)

- [[3-(Methacryloxy)propyl]trimethoxysilane] : log Kow 2.1 (SIDS)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : log Kow = 1.523 (SIDS)

- [Ammonia] : log Pow 0.23 (ECHA)

- [Dipropylene glycol methyl ether] : 0.004 log Kow (ECHA)

- [Methanol] : log Pow -0.77 (ECHA)

- [α-Octadecyl-ω-hydroxypoly(oxy-1,2-ethanediyl)] : log Kow 6.34 (Estimate)

○ Degradability

- Not available

C. Bioaccumulative potential

○ Bioaccumulative potential

- [[3-(Methacryloxy)propyl]trimethoxysilane] : BCF 3.5 (nominal concentration 5 mg/L) and 34 (nominal concentration 0.5 mg/L) (OECD TG 305 C, GLP) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : BCF = 1.47 (SIDS)

- [Chromium trioxide] : BCF 4.6 ~ 72 (NICS)

- [Methanol] : BCF < 10 (ECHA)

○ Biodegradation

- [[3-(Methacryloxy)propyl]trimethoxysilane] : Readily biodegradable, 69 % degradation (O2 consumption) 28d (OECD TG 301 F, GLP) (ECHA)

- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : Biodegradability = 91 (%) 28 day (IUCLID)

- [Ammonia] : Readily biodegradable (ECHA)

- [Dipropylene glycol methyl ether] : 34 % 24 day (non-biodegradable, OECD Guideline 301 B, GLP)(ECHA)

- [Methanol] : Readily biodegradable, 97 % 20 d (O2 consumption) (ECHA)

D. Mobility in soil

- [Ammonia] : log Koc 5 (ECHA)
- [Methanol] : Koc 0.13~0.61 dimensionless (ECHA)

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable
- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Air transport(IATA): Not subject to IATA regulations.
- Emergency Action Code
- Hazard No.(ADR)
- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- Tunnel Restriction Code
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- [Water] : Not applicable
- [Substituted alkene polymer with alkyl(C=3-5) methacrylate, alkyl(C=3-5) acrylate, alkenyl(C=1-4)carbomonocycle, alkyl(C=6-10) methacrylate, alkyl(C=1-3) methacrylate] : Not applicable
- [[3-(Methacryloxy)propyl]trimethoxysilane] : Not applicable
- [2-Propanol, 1-(2-butoxy-1-methylethoxy)-] : Not applicable
- [1-Ethylpyrrolidin-2-one] : Not applicable
- [Chromium trioxide] : Not applicable

- [Ammonium hydroxide] : Not applicable
- [Ammonia] : Not applicable
- [Tetrafluoroethene homopolymer] : Not applicable
- [Dipropylene glycol methyl ether] : Not applicable
- [Poly(oxy-1,2-ethanediyl), α-sulfo-ω-(nonylphenoxy)-, ammonium salt (1:1)] : Not applicable
- [Polyethylene] : Not applicable
- [Methanol] : Not applicable
- [α-Octadecyl-ω-hydroxypoly(oxy-1,2-ethanediyl)] : Not applicable

○ Information of EU Classification

* Classification
  - [Chromium trioxide] : H271,H301,H311,H314,H317,H330,H334,H340,H350,H361,H372,H400,H410
  - [Ammonium hydroxide] : H314,H400
  - [Ammonia] : H221,H280,H314,H331,H400
  - [Methanol] : H225,H301,H311,H331,H370

○ U.S. Federal regulations

* OSHA PROCESS SAFETY (29CFR1910.119)
  - [Ammonia] : 4535.99 kg 10000 lb
* CERCLA Section 103 (40CFR302.4)
  - [Ammonium hydroxide] : 453.599 kg 1000 lb
  - [Ammonia] : 45.3599 kg 100 lb
  - [Methanol] : 2267.995 kg 5000 lb
* EPCRA Section 302 (40CFR355.30)
  - [Ammonia] : 226.7995 kg 500 lb
* EPCRA Section 304 (40CFR355.40)
  - [Ammonia] : 45.3599 kg 100 lb
* EPCRA Section 313 (40CFR372.65)
  - [Ammonium hydroxide] : Applicable
  - [Ammonia] : Applicable
  - [Methanol] : Applicable

○ Rotterdam Convention listed ingredients

- Not applicable

○ Stockholm Convention listed ingredients

- Not applicable

○ Montreal Protocol listed ingredients

- Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2025-09-15

C. Revision number and Last date revised

- 2 times, 2025-09-15

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).