SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

H7 6 N002M HPP

Date of issue: 2025-12-15 Revision date: 2025-12-15 Version: 1.2

1. IDENTIFICATION

A. Product name

- H7 6 N002M HPP

B. Recommended use and restriction on use

- General use : paint
- 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 :

2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable liquids : Category3
- Acute toxicity (inhalation: vapor) : Category4
- Skin corrosion/irritation : Category1
- Serious eye damage/irritation : Category1
- Skin sensitization : Category1A
- Germ cell mutagenicity : Category1B
- Carcinogenicity : Category1B
- Reproductive toxicity : Category2
- Aspiration hazard : Category1
- Chronic aquatic toxicity : Category2

B. GHS label elements

○ Hazard symbols



○ Signal words

- Not applicable

○ Hazard statements

- H226 Flammable liquid and vapour
- H304 May be fatal if swallowed and enters airways
- H314 Causes severe skin burns and eye damage
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H332 Harmful if inhaled
- H340 May cause genetic defects
- H350 May cause cancer

- H361 Suspected of damaging fertility or the unborn child
- H411 Toxic 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.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P240 Ground and bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P242 Use non-sparking tools.
- P243 Take action to prevent static discharges.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- 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+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- 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 person to fresh air and keep 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.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P310 Immediately call a POISON CENTER or doctor/physician.
- 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).
- P331 Do NOT induce vomiting.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P362+P364 Take off contaminated clothing and wash before reuse.
- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P391 Collect spillage.

3) Storage

- P403+P235 Store in a well-ventilated place. Keep cool.
- 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(%)
Solvent naphtha (petroleum), light arom.	Naphtha	64742-95-6	0.1 미만
1,3-Benzenedicarboxylic acid polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol and 1,2-ethanediol	Bostik 7979	27923-68-8	0.1 미만
Solvent naphtha (petroleum), heavy arom.	Heavy aromatic naphtha ; (Polyethyl)benzenes ;	64742-94-5	0.1 미만
Pentanedioic acid, dimethyl ester	Pentanedioic acid, 1,5-dimethyl ester ; dimethyl glutarate ; Glutarate, dimethy ; Dimethyl 1,3-propanedicarboxylate ; Dimethyl pentanedioate ; Glutaric acid, dimethyl ester ; Methyl glutarate ;	1119-40-0	0.1 미만
Cyclohexanone	Hexanon ; Ketohexamethylene	108-94-1	0.1 미만
Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer	MELAMINE-FORMALDEHYDE RESIN	68002-20-0	0.1 미만
Isophorone	Isophoron ; a-Isophoron ; Isoacetophorone ; 1,5,5-Trimethylcyclohexen-3-one ; 3,5,5-Trimethyl-2-cyclohexene-1-one ; 3,5,5-Trimethylcyclohex-2-enone ; 1,1,3-Trimethyl-3-cyclohexene-5-one ; 3,3,5-Trimethyl-5-cyclohexen-1-one	78-59-1	0.1 미만
Saturated Polyester Resin	Saturated Polyester Resin	-	0.1 미만
Aluminium	Allbri aluminum paste and powder ; Aluminium bronze ; Aluminium flake ; Aluminum dehydrated ; Aluminum powder ; Metana ; Metana aluminum paste ; Noral aluminium ;	7429-90-5	0.1 미만
Xylene	Xylol ; Methyltoluene	1330-20-7	0.1 미만
2-Ethylhexanol	2-Ethyl-1-hexanol ; Ethylhexanol ; 2-Ethylhexyl alcohol ; Octyl alcohol ; 2-Ethylhexan-1-ol	104-76-7	0.1 미만
Hexanedioic acid dimethyl ester	Dimethyl adipate ; Dimethyl hexanedioate ; Hexanedioic acid, 1,6-dimethyl ester ; Hexanedioic acid, dimethyl ester ; Hexanedioic acid dimethyl ester ; HEXANEDIOIC ACID,DIMETHYL ESTER ; ADIPATE, DIMETHYL ; Adipic acid, dimethyl ester ; Methyl adipate ;	627-93-0	0.1 미만
Butanedioic acid dimethyl ester	Dimethyl succinate ; Methyl succinate ; Dimethyl butanedioate ; Butanedioic acid, 1,4-dimethyl ester ; Butanedioic acid, dimethyl ester ; Butanedioic acid dimethyl ester ; SUCCINATE, DIMETHYL ; Dimethyl butanedioate ; Succinic acid, dimethyl ester	106-65-0	0.1 미만
4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]	Not available	25036-25-3	0.1 미만
1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, hexanedioic acid and 1,3-isobenzofurandione	Not available	847449-84-7	0.1 미만
2-Propenoic acid butyl ester polymer 2-ethylhexyl 2-propenoate	Butyl prop-2-enoate--2-ethylhexyl prop-2-enoate (1/1)	26760-85-0	0.1 미만

Distillates (petroleum), hydrotreated light	Deodorized kerosene ; Low odor paraffinic solvent	64742-47-8	0.1 미만
Propylene glycol methyl ether acetate	Propylene glycol monomethyl ether acetate ; 2-(1-Methoxy)propyl acetate ; 1-Methoxypropan-2-yl acetate ;	108-65-6	0.1 미만
Sodium dodecyl sulfate	Sodium lauryl sulfate ; Dodecyl sodium sulfate ; Lauryl sodium sulfate ; Sodium dodecyl sulphate ; Dodecyl alcohol, hydrogen sulfate, sodium salt ; Lauryl sulfate sodium salt ; Sulfuric acid, monododecyl ester, sodium salt ;	151-21-3	0.1 미만
n-Butyl alcohol	1-Butanol ; Propylcarbinol ; Propylmethanol ; N-Butanol ; Butyric alcohol ; Butyl hydroxide ; 1-Hydroxybutane ; Methylolpropane ; Butyl alcohol ; Butan-1-Ol ;	71-36-3	0.1 미만
Isobutanol	Isobutyl alcohol ; 2-Methyl-1-propanol ; Isopropylcarbinol ; 2-Methylpropan-1-ol ; 1-Hydroxymethylpropane ; 2-Methyl propanol ; 2-Methylpropyl alcohol ; 1-Isobutanol	78-83-1	0.1 미만
Ethylbenzene	Benzene, ethyl- ; Ethyl benzene ; Ethylbenzol ; Phenylethane ;	100-41-4	0.1 미만
n-Butyl acetate	Acetic acid, butyl ester ; 1-Butyl acetate ; Butyl acetate ; Acetic acid N-butyl ester ; Butyl ethanoate ; 1-Acetoxybutane	123-86-4	0.1 미만
3-Ethoxypropanoic acid ethyl ester	Ethyl 3-ethoxypropionate ; Propanoic acid, 3-ethoxy-, ethyl ester ; Ethyl 4-oxahexanoate ; Ethyl 3-ethoxypropanoate	763-69-9	0.1 미만
Epoxy modified alkyd resin	Epoxy modified alkyd resin	-	0.1 미만
Carbon black	Inorganic,carbon black ; Acetylene Black ; Channel black	1333-86-4	0.1 미만
2-Propanol	Isopropanol ; Dimethylcarbinol ; Isopropyl alcohol ; n-Propan-2-ol ; Propan-2-ol ; i-Propyl alcohol ; 2-Propanol	67-63-0	0.1 미만
Formaldehyde	Formaldehyde ; Formalin ; Methanal ; Methyl Aldehyde ; Methylene Glycol ; Methylene Oxide ; Oxomethane ; Oxomethylene ; Oxymethylene	50-00-0	0.1 미만

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.
- 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.
- If swallowed, large amounts of water to drink and do not induce vomiting.

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 damage
- Causes severe skin burns and eye damage
- Flammable liquid and vapour
- Harmful if inhaled
- May be fatal if swallowed and enters airways

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

- [Cyclohexanone] : TWA, 20 ppm (80 mg/m3) STEL, 50 ppm (200 mg/m3) Skin
- [Isophorone] : Ceiling, 5 ppm (28 mg/m3)
- [Aluminium] : TWA, 1 mg/m3, Respirable Particulate Matter
- [Xylene] : TWA 20 ppm
- [2-Ethylhexanol] : TWA 5 ppm
- [n-Butyl alcohol] : TWA, 20 ppm (61 mg/m3)
- [Isobutanol] : TWA, 50 ppm (152 mg/m3)
- [Ethylbenzene] : TWA, 20 ppm (87 mg/m3)
- [n-Butyl acetate] : TWA 50 ppm , STEL 150 ppm
- [Carbon black] : TWA, 3 mg/m3, Inhalable particulate matter
- [2-Propanol] : TWA, 200 ppm (491 mg/m3), STEL, 400 ppm (984 mg/m3)
- [Formaldehyde] : TWA 0.1 ppm, STEL 0.3 ppm

○ OSHA PEL

- [Cyclohexanone] : 50 ppm, 200 mg/m3
- [Isophorone] : 25 ppm, 140 mg/m3
- [Aluminium] : 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)
- [Xylene] : 100 ppm, 435 mg/m3
- [n-Butyl alcohol] : 100 ppm, 300 mg/m3
- [Isobutanol] : 100 ppm, 300 mg/m3
- [Ethylbenzene] : 100 ppm, 435 mg/m3
- [n-Butyl acetate] : 150 ppm, 710 mg/m3
- [Carbon black] : 3.5 mg/m3
- [2-Propanol] : 400 ppm, 980 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	Opaque liquid
- Color	Not available
B. Odor	Solvent-like
C. Odor threshold	Not available
D. pH	0
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	117℃
G. Flash point	43℃
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	18% less
M. Vapour density	Heavier than air
N. Specific gravity(Relative density)	1.32~1.38
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	480℃
Q. Decomposition temperature	Not available
R. Viscosity	105~115sec (F#4)
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

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

B. Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid: Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

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

- May be fatal if swallowed and enters airways

○ Oral

- Not available

○ Eye·Skin

- Causes serious eye damage
- Causes severe skin burns and eye damage
- 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) : 2000mg/kg < ATEmix <= 5000mg/kg
- [Solvent naphtha (petroleum), light arom.] : LD50 > 5000 mg/kg Rat (Read across 86290-81-5)(OECD TG 401,GLP)(ECHA)
- [Solvent naphtha (petroleum), heavy arom.] : LD50 > 5000 mg/kg Rat (Read-across CAS No. 68333-23-3) (OECD TG 420, GLP) (ECHA)
- [Pentanedioic acid, dimethyl ester] : LD50 = 1920 ㎎/㎏ Rat (IUCLID)
- [Cyclohexanone] : LD50 1890 mg/kg Rat (ECHA)
- [Isophorone] : LD50 1500 ㎎/㎏ Rat EU harmonised Cat. 4 (ECHA)
- [Aluminium] : LD50 > 15900 ㎎/㎏ Rat (ECHA)
- [Xylene] : LD50 3523 mg/kg Rat (EU Method B.1) (ECHA)
- [2-Ethylhexanol] : LD50 2047 mg/kg Rat (OECD TG 401) (ECHA)
- [Hexanedioic acid dimethyl ester] : LD50 = 1920 ㎎/㎏ Rat (IUCLID)
- [Butanedioic acid dimethyl ester] : LD50 6892 ㎎/㎏ Rat OECD Guideline 401 (ECHA)
- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : LD50 > 2000 mg/kg Rat (NICS)
- [Distillates (petroleum), hydrotreated light] : LD50 > 5000 mg/kg Rat (OECD TG 420, GLP) (Read-across CAS No. 68333-23-3) (ECHA)
- [Propylene glycol methyl ether acetate] : LD50 6190 mg/kg Rat (OECD TG 401, GLP) (ECHA)
- [Sodium dodecyl sulfate] : LD50 1200 ㎎/㎏ Rat (SIDS)
- [n-Butyl alcohol] : LD50 1200 mg/kg Hamster, EU Harmonised Cat 4. (ECHA)
- [Isobutanol] : LD50 3350 ㎎/㎏ Rat (OECD TG 401, GLP) (ECHA)
- [Ethylbenzene] : LD50 3500 mg/kg Rat (ECHA)
- [n-Butyl acetate] : LD50 10760 mg/kg Rat (12.2 mL/kg) (OECD TG 423) (ECHA)
- [3-Ethoxypropanoic acid ethyl ester] : LD50 4309 mg/kg bw Rat (female), LD50 > 5000 mg/kg bw Rat (male) No death Not classified (OECD TG 401, GLP) (ECHA)
- [Carbon black] : LD50 > 8000 mg/kg Rat (OECD TG 401) (ECHA)
- [2-Propanol] : LD50 5840 mg/kg Rat (OECD TG 401) (ECHA)

- [Formaldehyde] : LD50 100mg/kg, Rat (NIER), LD50 460 mg/kg, Rat (OECD TG 401, ECHA)

* Dermal

- Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
- [Solvent naphtha (petroleum), light arom.] : LD50 > 2000 mg/kg Rabbit (Read across 86290-81-5)(OECD TG 402,GLP)(ECHA)
- [Solvent naphtha (petroleum), heavy arom.] : LD50 > 2000 mg/kg Rabbit (Read-across CAS No. 68333-23-3) (OECD TG 402, GLP) (ECHA)
- [Pentanedioic acid, dimethyl ester] : LD50 = 8500 ㎎/㎏ Rat (IUCLID)
- [Cyclohexanone] : LD50 947 mg/kg Rabbit (NITE)
- [Isophorone] : LD50 1200 mg/kg bw Rabbit EU harmonised Cat. 4 (ECHA)
- [Xylene] : LD50 1700 mg/kg Rabbit (NITE)、EU Harmonized Cat. 4 (ECHA)
- [2-Ethylhexanol] : LD50 > 3000 mg/kg Rat (OECD TG 402) (ECHA)
- [Butanedioic acid dimethyl ester] : LD50 > 2000 ㎎/㎏ Rat OECD Guideline 402 (ECHA)
- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : LD50 > 2000 mg/kg Rat (NICS)
- [Distillates (petroleum), hydrotreated light] : LD50 > 2000 mg/kg Rabbit Not classified (OECD TG 402, GLP) (Read-across CAS No. 68333-23-3) (ECHA)
- [Propylene glycol methyl ether acetate] : LD50 > 5000 mg/kg Rabbit (IUCLID)
- [Sodium dodecyl sulfate] : LD50 600 ㎎/㎏ Rabbit (SIDS)
- [n-Butyl alcohol] : LD50 ca. 3430 mg/kg Rabbit (OECD TG 402, GLP) (ECHA)
- [Isobutanol] : LD50 > 2000 ㎎/㎏ Rabbit (OECD TG 402, GLP) (ECHA)
- [Ethylbenzene] : LD50 15432 mg/kg (17.8 mL/kg) Rabbit (ECHA)
- [n-Butyl acetate] : LD50 > 14112 mg/kg Rabbit (> 16 mL/kg) (OECD TG 402) (ECHA)
- [3-Ethoxypropanoic acid ethyl ester] : LD50 4080 mg/kg bw Rabbit (male), LD50 4680 mg/kg bw Rabbit (female) Not classified (OECD TG 402) (ECHA)
- [Carbon black] : LD50 > 3000 mg/kg Rabbit (NITE), LD50 > 2000 mg/kg Rabbit (40 CFR, GLP) (ECHA)
- [2-Propanol] : LD50 12800 mg/kg (16.4 mL/kg) Rabbit (OECD TG 402) (ECHA)
- [Formaldehyde] : LD50 270mg/kg, Rabbit (NIER)

* Inhalation

- Product (ATEmix) : 10.0mg/L 4hr < ATEmix <= 20.0mg/L 4hr
- [Solvent naphtha (petroleum), light arom.] : Vapour LC50 > 7.63 mg/L Rat 4hr (Read across 86290-81-5)(OECD TG 403,GLP)(ECHA)
- [Solvent naphtha (petroleum), heavy arom.] : Aerosol LC50 > 5.2 mg/L 4hr Rat No death (Read-across CAS No. 64742-81-0) (OECD TG 403, GLP) (ECHA)
- [Cyclohexanone] : Vapor LC50 10~20 mg/L 4 hr (EU Harmonized) (ECHA)
- [Isophorone] : Aerosol LC50 7 mg/L air 4 hr Rat (ECHA)
- [Aluminium] : Dust(Aerosol) LC50 > 0.888 ㎎/ℓ 4 hr Rat No death Not classified (OECD TG 403, GLP) (ECHA)
- [Xylene] : Vapor LC50 > 10 ~ 20 mg/L 4hr, EU Harmonized Cat. 4 (ECHA)
- [2-Ethylhexanol] : Aerosol LC50 > 0.89 ~ <= 5.3 mg/L Rat (OECD TG 403, GLP) (ECHA)
- [Butanedioic acid dimethyl ester] : Aerosol LC0 > 5.9 mg/L 4hr Rat No death (ECHA)
- [Distillates (petroleum), hydrotreated light] : Vapor LC50 > 5.28 mg/L 4 hr No death Not classified (OECD TG 403, GLP) (Read-across CAS No. 8008-20-6) (ECHA)
- [Propylene glycol methyl ether acetate] : Vapor LC0 >23.3 mg/L/4h, LC0 > 1732ppm 4hr (> 2000 ppm 3hr) Rat No death Not classified (ECHA)
- [n-Butyl alcohol] : Vapour LC0 >= 24 mg/L 4hr Rat No death (OECD TG 403, ECHA)
- [Isobutanol] : Vapour LC50 > 18.18 ㎎/ℓ 6 hr Rat (40 CFR Part 798.1150, GLP) (ECHA)
- [Ethylbenzene] : Vapor LC50 10~20 mg/L 4 hr (EU Harmonized Cat. 4) (ECHA)
- [n-Butyl acetate] : Vapor LC50 > 6.6 mg/L 4 hr Rat No death Not classified (OECD TG 403, GLP) (ECHA)
- [3-Ethoxypropanoic acid ethyl ester] : Vapour LC50 > 7308.05 mg/m3 4 hr (LC50 > 5967 mg/m3 6 hr) No death, Not classified (OECD TG 403) (ECHA)

- [Carbon black] : Dust LC0 4.6 mg/m3 4 hr Rat No death Not classified (OECD TG 403) (ECHA)
- [2-Propanol] : Vapor LC50 > 30.1 mg/L 4 hr (>10000 ppm 6 hr) Rat (OECD TG 403, GLP) (ECHA)
- [Formaldehyde] : Gas LC50 = 480 ppm/4hr, Rat (SIDS), Vapour LC50 < 463 ppm/4hr, Rat (ECHA)

○ Skin corrosion/irritation

- Causes severe skin burns and eye damage

○ Serious eye damage/irritation

- Causes serious eye damage

○ Respiratory sensitization

- Not available

○ Skin sensitization

- May cause an allergic skin reaction

○ Carcinogenicity

* IARC
  - [Cyclohexanone] : Group 3
  - [Xylene] : Group 3
  - [Ethylbenzene] : Group 2B
  - [Carbon black] : Group 2B
  - [2-Propanol] : Group 3
  - [Formaldehyde] : Group 1
* OSHA
  - [Formaldehyde] : Applicable
* ACGIH
  - [Cyclohexanone] : A3
  - [Isophorone] : A3
  - [Aluminium] : A4
  - [Xylene] : A4
  - [2-Ethylhexanol] : A3
  - [Ethylbenzene] : A3
  - [Carbon black] : A3
  - [2-Propanol] : A4
  - [Formaldehyde] : A1
* NTP
  - [Formaldehyde] : K
* EU CLP
  - [Solvent naphtha (petroleum), light arom.] : Carc. 1B (Note P)
  - [Isophorone] : Carc.2
  - [Formaldehyde] : Carc. 1B

○ Germ cell mutagenicity

- May cause genetic defects

○ Reproductive toxicity

- Suspected of damaging fertility or the unborn child

○ STOT-single exposure

- Not available

○ STOT-repeated exposure

- Not available

○ Aspiration hazard

- May be fatal if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ Fish

- [Solvent naphtha (petroleum), light arom.] : LL50 8.2 mg/L 96hr Pimephales promelas (Read-across Light alkylate naphtha) (EPA 66013-75-009, GLP), NOELR 2.6 mg/L 14d Pimephales promelas (Read-across Light Catalytically Reformed Naphtha) (OECD TG 204, GLP) (ECHA)

- [Solvent naphtha (petroleum), heavy arom.] : LL50 2 ~ 5 mg/L 96 hr Oncorhynchus mykiss (OECD TG 203, GLP) (ECHA)

- [Pentanedioic acid, dimethyl ester] : LC50 13400 ㎎/ℓ 96 hr Oncorhynchus mykiss (ECOTOX)

- [Cyclohexanone] : LC50 527~732 mg/L 96 hr Pimephales promelas (ECHA)

- [Isophorone] : LC50 228 mg/L 96 hr, NOEC 4.2~15.6 mg/L 32 d Pimephales promelas (ECHA)

- [Aluminium] : NOEC > 50 ㎎/ℓ 96 hr Ictalurus punctatus (Read-across Cas No. 7466-70-0, 7784-13-6) (ECHA)

- [Xylene] : LC50 7.6 mg/L 96 hr Oncorhynchus mykiss (Read-across 95-47-6) (OECD TG 203) (ECHA), NOEC 0.714 mg/L 35 d Danio rerio (Read-across 106-42-3) (OECD TG 210, GLP) (ECHA)

- [2-Ethylhexanol] : LC50 17.1 mg/L 96 hr Leuciscus idus melanotus (EU Method C.1, GLP), LC10 0.278 mg/L 30d Danio rerio (OECD TG 210, GLP) (ECHA)

- [Hexanedioic acid dimethyl ester] : LC50 = 87.095 ㎎/ℓ 96 hr (Estimate)

- [Butanedioic acid dimethyl ester] : LC50 50 ~ 100 ㎎/ℓ 96 hr Danio rerio (OECD TG 203, GLP, ECHA)

- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : LC50 > 100 mg/L 96 hr O. latipes (NICS)

- [Distillates (petroleum), hydrotreated light] : LL50 2 ~ 5 mg/L 96 hr Oncorhynchus mykiss (OECD TG 203, GLP) (ECHA)

- [Propylene glycol methyl ether acetate] : LC50 100~180 mg/L 96 hr Oncorhynchus mykiss (OECD TG 203), NOEC 47.5 mg/L 14 d Oryzias latipes (OECD TG 204, GLP) (ECHA)

- [Sodium dodecyl sulfate] : LC50 29 ㎎/ℓ 96 hr Pimephales promelas (ECHA)

- [n-Butyl alcohol] : LC50 1376 ㎎/ℓ 96hr Pimephales promelas (OECD TG 203, GLP) (ECHA)

- [Isobutanol] : LC50 1430 ㎎/ℓ 96 hr Pimephales promelas (ECHA)

- [Ethylbenzene] : LC50 5.1 mg/L 96 hr Menidia menidia (ECHA)

- [n-Butyl acetate] : LC50 18 mg/L 96 hr Pimephales promelas (OECD TG 203) (ECHA)

- [3-Ethoxypropanoic acid ethyl ester] : LC50 45.3 mg/L 96 hr Pimephales promelas (OECD TG 203, GLP) (ECHA)

- [Carbon black] : LC50 > 1000 mg/L 96 hr Leuciscus idus (ECHA)

- [2-Propanol] : LC50 9640 mg/L 96 hr Pimephales promelas (ECHA)

- [Formaldehyde] : LC50 6.7 mg/L 96hr Morone saxatilis (ECHA)

○ Crustaceans

- [Solvent naphtha (petroleum), light arom.] : EL50 4.5 mg/L 48hr Daphnia magna (Read-across straight-run light gasoline) (OECD TG 202, GLP), NOELR 2.6 mg/L 21d (Read-across Light alkylate naphtha) (OECD TG 211, GLP) (ECHA)

- [Solvent naphtha (petroleum), heavy arom.] : EC50 0.95 mg/L 48hr Daphnia magna (IUCLID)

- [Pentanedioic acid, dimethyl ester] : EC50 3940 ~ 4670 ㎎/ℓ 48 hr Daphnia magna (ECOTOX)

- [Cyclohexanone] : EC50 > 100 mg/L 48 hr Daphnia magna (Read across CAS No. 120-92-3) (OECD TG 202, GLP) (ECHA)

- [Isophorone] : LC50 120 mg/L 48 hr Daphnia magna (ECHA)

- [Aluminium] : NOEC > 22.6 ㎎/ℓ 96 hr Acronuria sp. (Read-across Cas No. 7466-70-0, 7784-13-6) (ECHA)

- [Xylene] : EC50 4.7 mg/L 48 hr Daphnia magna (Read-across 108-38-3) (NIER), NOEC 1.17 mg/L 7 d Ceriodaphnia dubia (ECHA)

- [2-Ethylhexanol] : EC50 39 mg/L 48 hr Daphnia magna (EU Method C.2, GLP), EC10 1.53 mg/L 21d Daphnia magna (OECD TG 211, GLP) (ECHA)

- [Butanedioic acid dimethyl ester] : EC50 > 100 ㎎/ℓ 48 hr Daphnia magna OECD Guideline 202 (ECHA)

- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : EC50 > 100 mg/L 48 hr D. magna (NICS)

- [Distillates (petroleum), hydrotreated light] : EL50 1.4 mg/L 48 hr Daphnia magna (OECD TG 202, GLP) (ECHA)

- [Propylene glycol methyl ether acetate] : EC50 408 mg/L 48 hr Daphnia magna (OECD TG 202, GLP), NOEC >= 100

mg/L 21 d Daphnia magna (OECD TG 211, GLP) (ECHA)

- [Sodium dodecyl sulfate] : EC50 5.55 ㎎/ℓ 48 hr Ceriodaphnia dubia (ECHA), NOEC (reproduction) = 0.88 mg/L 7day Ceriodaphnia dubia(SIDS)

- [n-Butyl alcohol] : EC50 1328 ㎎/ℓ 48hr Daphnia magna (OECD TG 202, GLP), NOEC 4.1 ㎎/ℓ 21d Daphnia magna (OECD TG 211, GLP) (ECHA)

- [Isobutanol] : EC50 1100 ㎎/ℓ 48 hr Daphnia magna, NOEC 20 ㎎/ℓ 21 d Daphnia magna (ECHA)

- [Ethylbenzene] : EC50 1.8~2.4 mg/L 48 hr Daphnia magna, NOEC 0.96 mg/L 7 d Ceriodaphnia dubia (ECHA)

- [n-Butyl acetate] : EC50 44 mg/L 48 hr Daphnia sp. (OECD TG 202), NOEC 23.2 mg/L 21 d Daphnia magna (OECD TG 211, GLP, Read-across CAS No. 110-19-0) (ECHA)

- [3-Ethoxypropanoic acid ethyl ester] : EC50 > 479.7 mg/L 48 hr Daphnia magna (OECD TG 202, GLP) (ECHA)

- [Carbon black] : LC50 > 5600 mg/L 24 hr Daphnia magna (OECD TG 202, GLP) (ECHA)

- [Formaldehyde] : EC50 5.8 ㎎/ℓ 48hr Daphnia pulex (ECHA)

○ Algae

- [Solvent naphtha (petroleum), light arom.] : EL50 3.1 mg/L, NOELR 0.5 mg/L 72hr Selenastrum capricornutum (Read-across Blended Gasoline) (OECD TG 201, GLP) (ECHA)

- [Solvent naphtha (petroleum), heavy arom.] : EL50 1~3 mg/L 72hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Cyclohexanone] : EC50 > 100 mg/L 72 hr, NOEC >= 100 mg/L 72 hr Desmodesmus subspicatus (Read acorss CAS No. 120-92-3) (OECD TG 201, GLP) (ECHA)

- [Isophorone] : EC50 475 mg/L 72 hr Desmodesmus subspicatus (ECHA)

- [Xylene] : EC50 4.7 mg/L 72 hr Raphidocelis subcapitata (Read-across 95-47-6) (OECD TG 201) (ECHA)

- [2-Ethylhexanol] : EC50 21 mg/L, EC10 7.41 mg/L 72hr Desmodesmus subspicatus (EU Method C.3, GLP) (ECHA)

- [Hexanedioic acid dimethyl ester] : EC50 = 6.691 ㎎/ℓ 96 hr (No accurate information on Species) (Estimate)

- [Butanedioic acid dimethyl ester] : EC50 > 100 ㎎/ℓ 72 hr Raphidocelis subcapitata OECD Guideline 201 (ECHA)

- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : ErC50 > 100 mg/L, NOEC 100 mg/L 72 hr P. subspicatus (NICS)

- [Distillates (petroleum), hydrotreated light] : EL50 1 ~ 3 mg/L 48 hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Propylene glycol methyl ether acetate] : EC50 >1000 mg/L 72 hr, NOEC >= 1000 mg/L 96 hr Raphidocelis subcapitata (OECD TG 201) (ECHA)

- [Sodium dodecyl sulfate] : EC50 53mg/L 72hr, NOEC 30mg/L 72hr Desmodesmus subspicatus (ECHA)

- [n-Butyl alcohol] : EC50 225 mg/L 96hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Isobutanol] : EC50 593 ㎎/ℓ 72 hr, NOEC < 53 mg/L 72 hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Ethylbenzene] : EC50 3.6 mg/L 96 hr, NOEC 3.4 mg/L 96 hr Raphidocelis subcapitata (ECHA)

- [n-Butyl acetate] : EC50 392 mg/L 48 hr, NOEC 196 mg/L 48 hr Raphidocelis subcapitata (OECD TG 201, GLP) (Read-across CAS No. 110-19-0) (ECHA)

- [3-Ethoxypropanoic acid ethyl ester] : EC50 > 114.86 mg/L, NOEC 114.86 mg/L 72 hr Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [Carbon black] : EC50 > 10000 mg/L 72 hr, NOEC >= 10000 mg/L 72 hr Desmodesmus subspicatus (OECD TG 201, GLP) (ECHA)

- [Formaldehyde] : EC50 4.89 mg/L 72h Desmodesmus subspicatus (ECHA)

B. Persistence and degradability

○ Persistence

- [Solvent naphtha (petroleum), heavy arom.] : log Kow 2.9 ~ 6.1 (IUCLID)

- [Pentanedioic acid, dimethyl ester] : log Kow = 0.62

- [Cyclohexanone] : log Pow 0.86 (25 °C) (OECD TG 107) (ECHA)

- [Isophorone] : log Kow 1.67 (20 °C) (Method of Fujita et al. (1964)) (ECHA)

- [Xylene] : log Pow 3.12 (Read-across 95-47-6) (ECHA)

- [2-Ethylhexanol] : log Pow 2.9 (25 °C, pH 7) (ECHA)

- [Hexanedioic acid dimethyl ester] : log Kow = 1.03 (NLM/HSDB)

- [Butanedioic acid dimethyl ester] : log Kow 0.33 (ECHA)
- [Propylene glycol methyl ether acetate] : log Pow 1.2 (20 °C) (OECD TG 117, GLP) (ECHA)
- [Sodium dodecyl sulfate] : log Kow <= -2.03 (Estimate, ECHA)
- [n-Butyl alcohol] : log Pow 1 (25 °C, pH 7) (OECD TG 117, GLP) (ECHA)
- [Isobutanol] : log Kow 0.8 (ISCS), log Pow 1 (25 ℃) (OECD TG 117, GLP) (ECHA)
- [Ethylbenzene] : log Pow 3.6 (20 °C) (ECHA)
- [n-Butyl acetate] : log Pow 2.3 (25°C) (OECD TG 117, GLP) (ECHA)
- [3-Ethoxypropanoic acid ethyl ester] : log Pow 1.47 (pH 6.3) (OECD Guideline 117, GLP) (ECHA)
- [2-Propanol] : log Pow 0.05 (25 °C) (ECHA)
- [Formaldehyde] : log Pow = 0.35 (20°C) (ECHA)

○ Degradability

- Not available

C. Bioaccumulative potential

○ Bioaccumulative potential

- [Solvent naphtha (petroleum), heavy arom.] : BCF 130 ~ 159 (IUCLID)
- [Isophorone] : BCF 7 dimensionless (low-through Bioaccumulation Test) (ECHA)
- [Xylene] : BCF 25.9 dimensionless (ECHA)
- [2-Ethylhexanol] : BCF 13 (HSDB)
- [Hexanedioic acid dimethyl ester] : BCF 1.2 (estimated by log Kow 1.03) (NLM/HSDB))
- [Butanedioic acid dimethyl ester] : BCF 1.1 (HSDB)
- [Distillates (petroleum), hydrotreated light] : BCF 130 ~ 159 (Jordanella floridae(Fish, fresh water), 1mg/l) (IUCLID)
- [Sodium dodecyl sulfate] : BCF 2.1 ~ 7.1 (OECD SIDS)
- [Ethylbenzene] : BCF 1 (ECHA)

○ Biodegradation

- [Solvent naphtha (petroleum), heavy arom.] : Not Readily Biodegradable, 58.6 % degradation 28 day (Aerobic, activated sludge) (Read-across CAS No. 8008-20-6) (OECD TG 301F) (ECHA)
- [Pentanedioic acid, dimethyl ester] : 98 (%) 28 day (OECD TG 301C, IUCLID)
- [Cyclohexanone] : Readily biodegradable, 90 ~ 100 % (O_2 consumption) 28 d (OECD TG 301 F) (ECHA)
- [Isophorone] : Readily biodegradable 95 % degradation (DOC removal) 28 d (EU Method C.4-A, GLP) (ECHA)
- [Xylene] : Readily biodegradable, 94 % 28 d (O_2 consumption) (Read-across 95-47-6) (OECD TG 301 F, GLP) (ECHA)
- [2-Ethylhexanol] : Readily biodegradable, 79 ~ 99.9 % degradation (O_2 consumption) 14d (OECD TG 301C) (ECHA)
- [Butanedioic acid dimethyl ester] : Readily biodegradable 74.1 % degradation (CO_2 evolution) 28d (ECHA)
- [Propylene glycol methyl ether acetate] : 83 % 28 d, Readily biodegradable (OECD TG 301 F, GLP) (ECHA)
- [Sodium dodecyl sulfate] : readily biodegradable (95% degradation(CO_2 evolution) 28day) (ECHA)
- [n-Butyl alcohol] : Readily biodegradable, 92 % degradation (O_2 consumption) 20d (ECHA)
- [Isobutanol] : Readily biodegradable, 70 ~ 80 % 28 d (O_2 consumption) (OECD TG 301 D) (ECHA)
- [Ethylbenzene] : Readily biodegradable, 70~ 80 % 28 d (inorg. C analysis) (ISO 14593-CO_2-Headspace Test) (ECHA)
- [n-Butyl acetate] : 83 % 28 d, Readily biodegradable (OECD TG 301 D) (ECHA)
- [3-Ethoxypropanoic acid ethyl ester] : Readily biodegradable 108 % 18 d (CO_2 evolution) (OECD Guideline 301 B, GLP) (ECHA)
- [Carbon black] : 6 % 28 d, Not readily biodegradable (OECD TG 301 B, GLP) (ECHA)
- [2-Propanol] : Readily biodegradable, BOD5/COD ratio ≥ 0.5 (EU Method C.5 and EU Method C.6) (ECHA)
- [Formaldehyde] : readily biodegradable (99% 28days) (ECHA)

D. Mobility in soil

- [Xylene] : log Koc ca. 2.73 dimensionless (Read-across 95-47-6) (OECD TG 121) (ECHA)
- [Hexanedioic acid dimethyl ester] : Koc 10.9 (estimate)

- [Isobutanol] : Koc 2.92 (log Koc 0.47) (calculation) (ECHA)

- [2-Propanol] : log Koc 0.03 (SIDS)

E. Other adverse effects

- [Isobutanol] : Crustaceans(Daphnia magna); NOEC(21d) 20mg/L Algae(Pseudokirchnerella subcapitata); NOEC(72h)>53mg/L (OECD Guideline 201, Alga, Growth Inhibition Test,GLP) (ECHA)

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)

- 1263

B. Proper shipping name

- PAINT

C. Hazard Class

- 3

D. IMDG CODE/IATA DGR Packing group

- I

E. Marine pollutant

- Applicable

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

- Air transport(IATA): Not subject to IATA regulations.

- 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.

- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)

- EmS SPILLAGE SCHEDULE : S-E (Flammable liquids, floating on water)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- [Solvent naphtha (petroleum), light arom.] : Not applicable

- [1,3-Benzenedicarboxylic acid polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol and 1,2-ethanediol] : Not applicable

- [Solvent naphtha (petroleum), heavy arom.] : Not applicable

- [Pentanedioic acid, dimethyl ester] : Not applicable

- [Cyclohexanone] : Not applicable

- [Methylated 1,3,5-triazine-2,4,6-triamine, formaldehyde polymer] : Not applicable

- [Isophorone] : Not applicable

- [Saturated Polyester Resin] : Not applicable

- [Aluminium] : Not applicable

- [Xylene] : Not applicable

- [2-Ethylhexanol] : Not applicable
- [Hexanedioic acid dimethyl ester] : Not applicable
- [Butanedioic acid dimethyl ester] : Not applicable
- [4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]] : Not applicable
- [1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 2,2-dimethyl-1,3-propanediol, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, hexanedioic acid and 1,3-isobenzofurandione] : Not applicable
- [2-Propenoic acid butyl ester polymer 2-ethylhexyl 2-propenoate] : Not applicable
- [Distillates (petroleum), hydrotreated light] : Not applicable
- [Propylene glycol methyl ether acetate] : Not applicable
- [Sodium dodecyl sulfate] : Not applicable
- [n-Butyl alcohol] : Not applicable
- [Isobutanol] : Not applicable
- [Ethylbenzene] : Not applicable
- [n-Butyl acetate] : Not applicable
- [3-Ethoxypropanoic acid ethyl ester] : Not applicable
- [Epoxy modified alkyd resin] : Not applicable
- [Carbon black] : Not applicable
- [2-Propanol] : Not applicable
- [Formaldehyde] : Not applicable

○ Information of EU Classification

* Classification
  - [Solvent naphtha (petroleum), light arom.] : H304,H340,H350
  - [Solvent naphtha (petroleum), heavy arom.] : H304
  - [Cyclohexanone] : H226,H332
  - [Isophorone] : H302,H312,H319,H335,H351
  - [Aluminium] : H228,H250,H261
  - [Xylene] : H226,H312,H315,H332
  - [Distillates (petroleum), hydrotreated light] : H304
  - [Propylene glycol methyl ether acetate] : H226
  - [n-Butyl alcohol] : H226,H302,H315,H318,H335,H336
  - [Isobutanol] : H226,H315,H318,H335,H336
  - [Ethylbenzene] : H225,H304,H332,H373
  - [n-Butyl acetate] : H226,H336
  - [2-Propanol] : H225,H319,H336
  - [Formaldehyde] : H301,H311,H314,H317,H331,H341,H350

○ U.S. Federal regulations

* OSHA PROCESS SAFETY (29CFR1910.119)
  - [Formaldehyde] : 453.599 kg 1000 lb

* CERCLA Section 103 (40CFR302.4)
  - [Cyclohexanone] : 2267.995 kg 5000 lb
  - [Isophorone] : 2267.995 kg 5000 lb
  - [Xylene] : 45.3599 kg 100 lb
  - [n-Butyl alcohol] : 2267.995 kg 5000 lb
  - [Isobutanol] : 2267.995 kg 5000 lb
  - [Ethylbenzene] : 453.599 kg 1000 lb
  - [n-Butyl acetate] : 2267.995 kg 5000 lb

- [Formaldehyde] : 45.3599 kg 100 lb

* EPCRA Section 302 (40CFR355.30)

- [Formaldehyde] : 226.7995 kg 500 lb

* EPCRA Section 304 (40CFR355.40)

- [Formaldehyde] : 45.3599 kg 100 lb

* EPCRA Section 313 (40CFR372.65)

- [Aluminium] : Applicable
- [Xylene] : Applicable
- [n-Butyl alcohol] : Applicable
- [Ethylbenzene] : Applicable
- [2-Propanol] : Applicable
- [Formaldehyde] : 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

- 2025-12-15

C. Revision number and Last date revised

- 2 times, 2025-12-15

D. Other

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