1. Identification

A. Product name : WATER BASED URETHANE TOPCOAT CLEAR (BASE)

B. Recommended Use and Restriction on Use
- ○ General use : TOP COAT FOR WATER BASED COATING, CLEAR
- ○ Restriction on use : Restricted to use other than recommended use

C. Manufacturer / Supplier / distributor information
- ○ Company name : NOROO Paint & Coatings Co., Ltd.
- ○ Address : 351, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Korea
- ○ Emergency telephone number : +82-31-467-6114

2. Hazard identification

A. GHS Classification
Carcinogenicity Category 1B
Germ cell mutagenicity Category 1B
Chronic aquatic toxicity Category 3

B. GHS label elements
- ○ Hazard symbols

- ○ Signal words : DANGER
- ○ Hazard statements :

H350 May cause cancer
H340 May cause genetic defects
H412 Harmful to aquatic life with long lasting effects

- ○ Precautionary statements
  - Prevention

    P201 Obtain special instructions before use.
    P202 Do not handle until all safety precautions have been read and understood.
    P280 Wear protective gloves/protective clothing/eye protection/face protection.
    P273 Avoid release to the environment.
  - Response

    P308+P313 If exposed or concerned: Get medical advice / attention.
  - Storage

    P405 Store in a locked place.
  - Disposal

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

C. Other hazards which do not result in classification : (NFPA Classification)

NFPA grade / Chemical Name	Health	Flammability	Reactivity
Water	0	0	0
2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid	NO DATA	NO DATA	NO DATA
2-Propanol, 1-(2-butoxy-1-methylethoxy)-	1	1	0
1-Butoxy-2-propanol	2	2	0
Solvent naphtha (petroleum), light arom.	1	2	0
Trade secret	NO DATA	NO DATA	NO DATA
Propylene glycol	0	1	0

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
Water	Water	7732-18-5	51~61
2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid	2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid	26351-99-5	31~41
2-Propanol, 1-(2-butoxy-1-methylethoxy)-	2-Propanol, 1-(2-butoxy-1-methylethoxy)-	29911-28-2	1~10
1-Butoxy-2-propanol	1-Butoxy-2-propanol	5131-66-8	1~10
Solvent naphtha (petroleum), light arom.	Solvent naphtha (petroleum), light arom.	64742-95-6	1~10
Trade secret	-	-	1~10
Propylene glycol	Propylene glycol	57-55-6	1~10

4. First-aid measures

A. Eye Contact : If irritation, pain, swelling, tears or glaring happens, take medical assistant immediately Flush exposed eyes with plenty of water for more than 15minutes.

B. Skin Contact : Wash off with soap and water for more than 15 minutes. And take medical assistant immediately. If symptoms like irritation or pain occurs, take medical assistant immediately. Remove exposed clothing, and wash off exposed area with soap and water.

C. Inhalation : Remove contaminated clothing and shoes, and isolate it. If hard to breathe, administering oxygen Perform the artificial respiration, using the pocket mask with one way valves or other respiratory medical devices. If inhalated or swallowed, do not perform the inhalation phase of breathing Take a medical assistant immediately. If not breathing, perform the artificial respiration. Avoid from exposure, and move into an area with fresh air.

D. Ingestion Contact : It is need to be considered that early removal of some ingested material by gastric lavage must be weighed against potential complications of bleeding or perforation Take proper medical assistant by symtoms. Inducing vomit. Do not try to induce vomiting, if occurs, keep head below hips to prevent swallow into lungs. If ingested large quantity, take medical assistant.

E. Notes to Physician : There is no specific antidote and take an appropriate medical treatment.

5. Fire-fighting measures

A. Suitable (Unsuitable) extinguishing media
○ Suitable extinguishing media : Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.
○ (Unsuitable) extinguishing media : Water is not appropriate extinguishing agent
○ Case of big fire : Use appropriate protective device depend on the situation. Spread large amount of the extinguishing agent as a mist form with staying against wind.

B. Specific hazards arising from the chemical
○ Pyrolysate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds
○ Fire and Explosion danger : Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.

C. Special protective actions for fire-fighters
○ Personal Precautions, protective equipment : Gas mask or air respirator, heat resistant clothing, heat resistant helmet, heat resistant gloves, heat resistant boots
○ Emergency procedures : Use appropriate extinguishing agents to catch fire. Block the area except for the fire-suppression personnel. Avoid inhalation of the substance or combustion products.

6. Accidental release measures

A. Personal Precautions, protective equipment and emergency procedures
○ Personal Precautions, protective equipment : Gas mask for organic gases, other appropriate protective device / clothing / gloves.
○ Emergency procedures : Do not contact on the bare skin

B. Environmental precautions
○ Atmosphere : Using local ventilation to Minimize the exposure to worker. Do install the local ventilations and full ventilation system
○ Soil : Use absorbent to collect the appropriate container. Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.
○ Under water : Collect spilled material with mechanic devices Use absorbent to collect the appropriate container.

C. Methods and materials for containment and cleaning up
○ Small spill : Move to appropriate container for disposal of spilled material collected. Absorb for use sand or other non-combustible material.
○ Large spill : Notify to central and local government, when emissions are above regulation. Prohibit access of unnecessary people, isolate hazard area to secure.

7. Handling and storage

A. Precautions for safe handling : Avoid contact with prohibited materials in mixture. Wash carefully after handling. Use local ventilations and a full ventilation system when handling Do not inhale vapor for long-term or repeatedly. Do not handle until read and understood all safety precautions.

B. Conditions for safe storage, including any incompatibilities : Stored in an isolated place, freezing caution, high temperature body caution. Avoid strong oxidizing agents, acid. Storage temperature: 5 ~ 35 ℃ Avoid direct sunlight while storing outdoor. Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.

8. Exposure controls/personal protection

A. Exposure Limits
○ Water
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 1-Butoxy-2-propanol

- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Solvent naphtha (petroleum), light arom.
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Trade secret
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Propylene glycol
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

B. Engineering Controls :
▷ Do install the local ventilations and full ventilation system
▷ Using local ventilation to Minimize the exposure to worker.
▷ NO DATA
▷ NO DATA

C. Personal Protective Equipment
○ Respiratory protection : Respirators should be authorized by Korea Occupational Safety and Health Agency
○ Eye protection : Let workers do wear the safety glasses in case hazard caused by mist may be expected. Install washing facilities and an emergency washing facilities close to workplace.
○ Hand protection : Wear appropriate protective gloves
○ Skin protection : Wear cleanroom garment or appropriate protective clothing to prevent contamination

9. Physical and chemical properties

A. Appearance : CLEAR LIQUID

B. Odor : NO

C. Odor threshold : NO DATA

D. PH : NO DATA

E. Melting point/Freezing point(℃) : NO DATA

F. Initial Boiling Point/Boiling Ranges(℃) : NO DATA

G. Flash point(℃) : NON Flammable

H. Evaporating Rate : NO DATA

I. Flammability(solid, gas)(℃) : NON Flammable

J. Upper/Lower Flammability or explosive limits : NO DATA

K. Vapour pressure : NO DATA

L. Solubility : NO DATA

M. Vapour density : NO DATA

N. Specific gravity : 1.04 ± 0.3

O. Partition coefficient of n-octanol/water : NO DATA

P. Autoignition temperature(℃) : NO DATA

Q. Decomposition temperature(℃) : NO DATA

R. Viscosity : 50±10 (KU/25℃)

S. Molecular weight : NO DATA

10. Stability and reactivity

A. Chemical stability : NO DATA

B. Possibility of hazardous reactions : Avoid contaminants and friction

C. Conditions to avoid : NO DATA

D. Hazardous decomposition products : Thermal decomposition products (carbon etc.,)

11.Toxicological information

A. Information on the likely routes of exposure
○ Respiratory tracts : Adverse lung effects, Dyspnoea, Hypothermia, Vomitting
○ Oral : Vomitting, Diarrhea, Stomach pain, Irregular heartbeat
○ Skin : Irritation, Burn, Adverse nerve effects
○ Eye : Irritation, eye damage

B. Delayed and immediate effects and also chronic effects from short and long term exposure
○ Water
- Acute toxicity
Oral : LD50 = 90000 mg/kg Rat
Dermal : NO DATA
Inhalation : NO DATA
- Skin corrosion/irritation : notapplicable

- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- Acute toxicity
  Oral : NO DATA
  Dermal : NO DATA
  Inhalation : NO DATA
- Skin corrosion/irritation : NO DATA
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
- Acute toxicity
  Oral : LD50 = 2160 mg/kg Rat
  Dermal : LD50 > 2000 mg/kg Rat
  Inhalation : LD50 > 2000 mg/kg Rat
- Skin corrosion/irritation : Slightly irritating , PII = 12/110 at 1 hr
- Serious eye damage/irritation : Slightly irritating, PII=2/8
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : Ames test : Negative TA98,100,1535,1537 : 5.0-5000 mg/plate In vitro L5178Y TK+/- Mouse Lymphoma Cell Assay : Negative L5178Y cells : up to 6000 ug/ml In Vitro Unscheduled DNA Synthesis : Negative primary rat hepatocytes : up to 6000 ug/ml Cytogenetics assay : Nega
- Reproductive toxicity : Developmental toxicity/Teratogenicity Rat, Wistar Dose : 273, 910 mg/kg(days 6-16 of gestation) NOAEL materal : 910 mg/kg bw NOAEL teratogen : 910 mg/kg bw Result : No effect
- STOT-single exposure : NO DATA
- STOT-repeated exposure : Rat oral feed 13W NOAEL = ca. 300mg/kg rat (steam inhalation, 2 weeks 5 days a week, six hours a day exposure): NOAEL 0.2mg / L, LOAEL> 0.2mg / L,
- Aspiration hazard : NO DATA

○ 1-Butoxy-2-propanol
- Acute toxicity
  Oral : LD50 = 5660 mg/kg Rat
  Dermal : LD50 = 3100 mg/kg rabbit
  Inhalation : LD50 = 3100 mg/kg rabbit
- Skin corrosion/irritation : skin, eyes Irritation (ICSC, TOMES)
- Serious eye damage/irritation : Skin and eye irritant that (ICSC, TOMES)
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ Solvent naphtha (petroleum), light arom.
- Acute toxicity

Oral : LD50 = 8400 ㎎/㎏ Rat
Dermal : LD50 > 2000 ㎎/㎏ Rabbit
Inhalation : LD50 > 2000 ㎎/㎏ Rabbit
- Skin corrosion/irritation : weakstimulus(rabbit)
- Serious eye damage/irritation : Mild irritant(rabbit)
- Respiratory sensitization : NO DATA
- Skin sensitization : Non-sensitizer (Guinea pig)
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : Carc. 1B
- Germ cell mutagenicity : EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)
- Reproductive toxicity : EU CLP: 1B (case containing less than 0.1% of the benzene in a weight ratio of the material not applied to the present classification)
- STOT-single exposure : Affecting the central nervous system. Inhalation of high concentrations vapors may cause loss of consciousness.
- STOT-repeated exposure : NO DATA
- Aspiration hazard : Harmful aspiration concerns

○ Trade secret
- Acute toxicity
Oral : NO DATA
Dermal : NO DATA
Inhalation : NO DATA
- Skin corrosion/irritation : NO DATA
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ Propylene glycol
- Acute toxicity
Oral : LD50 20,000 mg/kg Rat
Dermal : LD50 20,800 mg/kg Rabbit
Inhalation : LD50 20,800 mg/kg Rabbit
- Skin corrosion/irritation : rabbit/OECD Guide-line 404: non-Irritation. human/skin(104 mg/2D): middle Irritation /skin(10%/2D): middle Irritati
- Serious eye damage/irritation : Person / EYE: Can cause minor eye irritation rabbit / Eyes (100 mg): slight irritation
- Respiratory sensitization : NO DATA
- Skin sensitization : Person / Draize Test: No sensitization
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : In vitro - Salmonella typhimurium/TA 98, TA100, TA1535, TA1537 (Ames' test): Negative, Human/Sister chromatid exchangetest: Negative
- Reproductive toxicity : Rabbit in pregnancy 1230 mg / kg when administered for 10 days is not the effect of fertilization, the fetus or the mother's survival was no effect.
- STOT-single exposure : Symptoms of non-toxic inhibition of the central nervous system during anesthesia. No long-term targets sameulman.
- STOT-repeated exposure : Exposure to rats for 90 days reduced weight and feed intake, but the clinical-chemical and hematological changes are not numerically.
- Aspiration hazard : NO DATA

12. Ecological information

A. Ecotoxicity
○ Water
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

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

- Crustaceans : LC50 > 1000 ㎎/ℓ 48 hr Daphnia magna
- Algae : EC50 = 556.4 ㎎/ℓ 96 hr Other (SIDS)

○ 1-Butoxy-2-propanol
- Fish : LC50 = 797.9 ㎎/ℓ 96 hr (ECOSAR Class: Neutral Organics)
- Crustaceans : EC50 = 387.199 ㎎/ℓ 48 hr (ECOSAR Class: Neutral Organics)
- Algae : EC50 = 118.237 ㎎/ℓ 96 hr (ECOSAR Class: Neutral Organics)

○ Solvent naphtha (petroleum), light arom.
- Fish : LC50 = 9.22 ㎎/ℓ 96 hr Oncorhynchus mykiss
- Crustaceans : EC50 = 6.14 ㎎/ℓ 48 hr Daphnia magna
- Algae : EC50 = 19 ㎎/ℓ 72 hr Selenastrum capricornutum

○ Trade secret
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ Propylene glycol
- Fish : LC50 = 710 ㎎/ℓ 96 hr Oncorhynchus mykiss
- Crustaceans : EC50 > 1000 ㎎/ℓ 48 hr Daphnia magna
- Algae : EC50 > 1000 ㎎/ℓ 72 hr Selenastrum capricornutum

B. Persistence and degradability

○ Water
- Persistence : log Kow = -1.38
- Degradability : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- Persistence : NO DATA
- Degradability : NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
- Persistence : log Kow = 1.5
- Degradability : NO DATA

○ 1-Butoxy-2-propanol
- Persistence : log Kow = 0.98
- Degradability : NO DATA

○ Solvent naphtha (petroleum), light arom.
- Persistence : log Kow = 2.1 ~ 6 (Estimates)
- Degradability : BOD5/COD = 0.43

○ Trade secret
- Persistence : NO DATA
- Degradability : NO DATA

○ Propylene glycol
- Persistence : log Kow = -1.4
- Degradability : NO DATA

C. Bioaccumulative potential

○ Water
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
- Bioaccumulative potential : BCF = 1.47
- Biodegration : Biodegradability = 91 (%) 28 day

○ 1-Butoxy-2-propanol
- Bioaccumulative potential : BCF = 3.162
- Biodegration : NO DATA

○ Solvent naphtha (petroleum), light arom.
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ Trade secret
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ Propylene glycol
- Bioaccumulative potential : BCF < 1
- Biodegration : Biodegradability > 60 (%) 10 day

D. Mobility in soil

○ Water
▷ NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
▷ NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
▷ NO DATA

○ 1-Butoxy-2-propanol
▷ Koc = 9.228

○ Solvent naphtha (petroleum), light arom.
▷ NO DATA

○ Trade secret
▷ NO DATA

○ Propylene glycol
▷ NO DATA

E. Other adverse effects
○ Water
▷ NO DATA
○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
▷ NO DATA
○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
▷ NO DATA
○ 1-Butoxy-2-propanol
▷ NO DATA
○ Solvent naphtha (petroleum), light arom.
▷ NO DATA
○ Trade secret
▷ NO DATA
○ Propylene glycol
▷ NO DATA

13. Disposal considerations

A. Disposal methods : Disposal material should keep in the airtighted container, and consign according to Waste Mateial Management Act

B. Special precautions for disposal : Discard it followed by appropriate regulations Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems

14. Transport information

A. UN number : Non regulated

B. Proper shipping name : N/A

C. Hazard class : Non dangerous goods

D. Packing group : N/A

E. Marine pollutant : N/A

F. Special precautions for user related to transport or transportation measures
○ EmS FIRE SCHEDULE : N/A
○ EmS SPILLAGE SCHEDULE : N/A

15. Regulatory information

○ Water
- Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
- U.S. Federal regulations
▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
▷ CERCLA Section 103 (40CFR302.4) : notapplicable
▷ EPCRA Section 302 (40CFR355.30) : notapplicable
▷ EPCRA Section 304 (40CFR355.40) : notapplicable
▷ EPCRA Section 313 (40CFR372.65) : notapplicable
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ 2-Hydroxyethyl 2-methyl-2-propenoate polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate and 2-propenoic acid
- Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
- U.S. Federal regulations
▷ OSHA PROCESS SAFETY (29CFR1910.119) : NO DATA
▷ CERCLA Section 103 (40CFR302.4) : NO DATA
▷ EPCRA Section 302 (40CFR355.30) : NO DATA
▷ EPCRA Section 304 (40CFR355.40) : NO DATA
▷ EPCRA Section 313 (40CFR372.65) : NO DATA
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ 2-Propanol, 1-(2-butoxy-1-methylethoxy)-
- Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
- U.S. Federal regulations
▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
▷ CERCLA Section 103 (40CFR302.4) : notapplicable
▷ EPCRA Section 302 (40CFR355.30) : notapplicable
▷ EPCRA Section 304 (40CFR355.40) : notapplicable
▷ EPCRA Section 313 (40CFR372.65) : notapplicable

- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ 1-Butoxy-2-propanol
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : NO DATA
  ▷ CERCLA Section 103 (40CFR302.4) : NO DATA
  ▷ EPCRA Section 302 (40CFR355.30) : NO DATA
  ▷ EPCRA Section 304 (40CFR355.40) : NO DATA
  ▷ EPCRA Section 313 (40CFR372.65) : NO DATA
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Solvent naphtha (petroleum), light arom.
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
  ▷ CERCLA Section 103 (40CFR302.4) : notapplicable
  ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
  ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
  ▷ EPCRA Section 313 (40CFR372.65) : notapplicable
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Trade secret
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : NO DATA
  ▷ CERCLA Section 103 (40CFR302.4) : NO DATA
  ▷ EPCRA Section 302 (40CFR355.30) : NO DATA
  ▷ EPCRA Section 304 (40CFR355.40) : NO DATA
  ▷ EPCRA Section 313 (40CFR372.65) : NO DATA
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Propylene glycol
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
  ▷ CERCLA Section 103 (40CFR302.4) : notapplicable
  ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
  ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
  ▷ EPCRA Section 313 (40CFR372.65) : notapplicable
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

16. Other information

A. Reference
This MSDS is based on 'Industrial safety and health' Act paragraph 41 and Proclamation of Ministry of Labor and Employment 2016-19, and considered domestic regulations.
This MSDS is based on KOSHA, NITE, ESIS, NLM, SIDS, IPCS, NCIS.

B. Issue date : 2020-09-16

C. Revision number and Last date revised : 1.(2020-09-18)

D. Other : " WWW.NOROO.CO.KR"