

1. Identification

- A. Product name : Hilac Plus White (NZ)
○ Usage category : Oil paint
- B. Recommended Use and Restriction on Use
○ General use : 칠재/목재용 락카
○ 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
Flammable liquids Category 2
Acute toxicity (inhalation: vapor) Category 3
Acute Toxicity (Inhalation: dust / mist) Category 4
Carcinogenicity Category 2
Serious eye damage/irritation Category 2A
Specific target organ toxicity(Single exposure) Category 2
Specific target organ toxicity(Single exposure) Category 3 (respiratory irritation)
Specific target organ toxicity(Repeated exposure) Category 1
Specific target organ toxicity(Repeated exposure) Category 2
Skin sensitization Category 1
Skin corrosion/irritation Category 2
Respiratory sensitization Category 1
Aspiration hazard Category 1
Ozone Layer Hazards
Acute toxicity (dermal) Category 5

- B. GHS label elements
○ Hazard symbols



- Signal words : DANGER
- Hazard statements :
- H225 Highly flammable liquid and vapour
 - H331 Toxic if inhaled
 - H332 Harmful if inhaled
 - H351 Suspected of causing cancer
 - H319 Causes serious eye irritation
 - H371 Causes damage to the immune system and kidneys in the body. (Refer Section SDS 11)
 - H335+H336 May cause respiratory irritation, May cause drowsiness and dizziness.
 - H372 Prolonged or repeated exposure may cause lung damage to the body (Refer Section SDS 11)
 - H373 Prolonged or repeated exposure may cause damage to the liver, testes, skin, respiratory system, blood and central nervous system of the body (Refer Section SDS 11)
 - H317 May cause an allergic skin reaction
 - H315 Causes skin irritation
 - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 - H304 May be fatal if swallowed and enters airways
 - H420 It destroys the upper layer of the ozone layer and is harmful to public health and environment.
 - H313 May be harmful in contact with skin.
- Precautionary statements
- Prevention
 - P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. no smoking
 - P223 Do not contact with water
 - P240 Ground container and receiving equipment
 - P241 Use explosion-proof equipment (electricity, ventilation, lighting, etc.)
 - P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
 - P243 Take precautionary measures against static discharge.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
 - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 - P271 Use only outdoors or in a well-ventilated area.
 - P201 Obtain special instructions before use.
 - P202 Do not handle until all safety precautions have been read and understood.
 - P264 Wash hands and contact areas thoroughly after handling.
 - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 - P270 Do not eat, drink or smoke when using this product.
 - P272 Contaminated work clothing should not be allowed out of the workplace.

- P284 (In case of poor ventilation) Wear respiratory protection.
- Response
 - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
 - P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - P310 Immediately call a POISON CENTER or doctor/physician.
 - P321 Specific treatment
 - P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 - P308+P313 If exposed or concerned: Get medical advice / attention.
 - 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 attention / attention.
 - P308+P311 If exposed or concerned: Get medical advice / attention.
 - P314 Get medical advice/attention if you feel unwell.
 - P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 - P362+P364 Take off contaminated clothing and wash before reuse.
 - P332+P313 If skin irritation occurs: Get medical advice/attention.
 - P342+P311 If respiratory symptoms occur, get medical attention.
 - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 - P331 Do NOT induce vomiting.
 - Storage
 - P403+P235 Store in a well-ventilated place. Keep cool.
 - P403+P233 Store in a well-ventilated place. Keep container tightly closed
 - P405 Save by locking.
 - Disposal
 - P501 Dispose of the contents and containers in accordance with waste-related laws.
 - P502 Please refer to the information on (recycling/recycling) provided by (manufacturer/supplier).

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

Chemical Name	NFPA grade	Health	Flammability	Reactivity	GHS Classification
Xylene		NO DATA	NO DATA	NO DATA	H225, H304, H313, H315, H319, H331, H335+H336, H372
Dimethyl carbonate		1	3	1	H225, H313
S1(Trade secrets)		NO DATA	NO DATA	NO DATA	NO DATA
Toluene		2	3	0	H225, H304, H313, H315, H319, H373
Rutile(TiO2)		1	0	0	NO DATA
4-Methyl-2-pentanone		1	3	0	H225, H313, H331
Acetic acid ethyl ester		1	3	0	H225, H313, H335+H336
Nitrocellulose		1	3	3	H317
S1(Trade secrets)		NO DATA	NO DATA	NO DATA	NO DATA
Ethylbenzene		2	3	0	H225, H304, H313, H315, H319, H331, H335+H336, H373, H420
Acetone		1	3	0	H225, H313, H335+H336
n-Butyl acetate		2	3	0	H225, H313, H335+H336
2-Butoxyethanol		3	2	0	H225, H313, H315, H319, H331
Methyl Ethyl Ketone		1	3	0	H225, H313, H315, H319, H335+H336, H371, H372
Gum rosin		4	1	0	H313, H317, H332, H334

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
Xylene	Xylene	1330-20-7	13-23
Dimethyl carbonate	Dimethyl carbonate	616-38-6	13-23
S1(Trade secrets)	Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil		10-20
Toluene	Toluene	108-88-3	11-21
Rutile(TiO2)	Rutile(TiO2)	1317-80-2	6-16
4-Methyl-2-			

pentanone	4-Methyl-2-pentanone	108-10-1	4~14
Acetic acid ethyl ester	Acetic acid ethyl ester	141-78-6	4~14
Nitrocellulose	Nitrocellulose	9004-70-0	2~12
S1(Trade secrets)	C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)		5~15
Ethylbenzene	Ethylbenzene	100-41-4	1~10
Acetone	Acetone	67-64-1	1~10
n-Butyl acetate	n-Butyl acetate	123-86-4	1~10
2-Butoxyethanol	2-Butoxyethanol	111-76-2	1~10
Methyl Ethyl Ketone	Methyl Ethyl Ketone	78-93-3	1~10
Gum rosin	Gum rosin	8050-09-7	1~10

4. First-aid measures

- A. Eye Contact : Flush exposed eyes with plenty of water for more than 15minutes.
If irritation, pain, swelling, tears or glaring happens, take medical assistant immediately
Do not rub your eyes.
If you wear a contact lenses, remove them first.
- B. Skin Contact : Remove exposed clothing, and wash off exposed area with soap and water.
If symptoms like irritation or pain occurs, take medical assistant immediately.
Wash off with soap and water for more than 15 minutes. And take medical assistant immediately.
If symptoms like redness or irritation occurs, take medical assistant immediately.
Wash carefully after handling.
Wear gloves while washing the patient and avoid contact with exposed clothes.
- C. Inhalation : Avoid from exposure, and move into an area with fresh air.
If not breathing, perform the artificial respiration.
If inhaled or swallowed, do not perform the inhalation phase of breathing
Perform the artificial respiration, using the pocket mask with one way valves or other respiratory medical devices.
If hard to breathe, administering oxygen
Remove contaminated clothing and shoes, and isolate it.
Take a medical assistant immediately.
- D. Ingestion Contact : Inducing vomit.
If unconscious, do not induce vomiting. In case of vomiting, keep head down under hip to prevent lung inhalation.
If ingested large quantity, take medical assistant.
Take proper medical assistant by symptoms.
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
Flush mouth with water immediately.
- 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 : Avoid digestion using direct water.
 Avoid use waterjet as fire extinguishing agent.
 Avoid extinguishing fire with halogenting agent.
 Case of big fire : Spread large amount of the extinguishing agent as a mist form with staying against wind.
 Stay away more than 800m to avoid tank explosion.
 Use appropriate protective device depend on the situation.
- B. Specific hazards arising from the chemical
 Pyrolysate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds
 Irritating and highly toxic gases may produced during the combustion by pyrolysis or combustion itself.
 Fire and Explosion danger : Risk of medium-sized fire.
 Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.
 Vapor may be released to the ignition source and ignited.
 May form explosive mixture at or above ignition point
 Container may explode when heating
 Leakages may fire / explosion hazard and could be easily ignited by heat, sparks or flames.
 Vapors may explode indoors, outdoors, and in drains
- 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.
 If there is no risk, moving containers away from fire.
 Cooling containers with water long time after extinguish fire.
 Block the area except for the fire-suppression personnel.
 Protect others from access and prohibit access to dangerous areas.
 Tell the fire department, location of the fire and the hazardous features.
 Use an unmanned fire extinguishing device, in case of large-sized fire. If not, leave it to burn.
 Avoid inhalation of the substance or combustion products.
 Do not approach if the tank is on fire.

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 : Take an action to block the leakage if there is no risk.
Spray water to reduce amount of steam.
Do work with the personal protected devices such as gas mask for organic gases other appropriate protective devices / clothing / gloves.
Do not contact on the bare skin
- B. Environmental precautions
- Atmosphere : Do install the local ventilations and full ventilation system
Using local ventilation to Minimize the exposure to worker.
 - Soil : Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.
Use absorbent to collect the appropriate container.
 - Under water : Use absorbent to collect the appropriate container.
Collect spilled material with mechanic devices
- C. Methods and materials for containment and cleaning up
- Small spill : Absorb for use sand or other non-combustible material.
Move to appropriate container for disposal of spilled material collected.
 - Large spill : Prohibit access of unnecessary people, isolate hazard area to secure.
Notify to central and local government, when emissions are above regulation.

7. Handling and storage

- A. Precautions for safe handling : Keep or handle followed by Dangerous goods Safety Management Act
- Ground for preventing the static discharge
Seal the container for minimizing the petroleum steam
Use local ventilations and a full ventilation system when handling
Wash carefully after handling.
Avoid contact with prohibited materials in mixture.
Do not handle until read and understood all safety precautions.
Do not inhale vapor for long-term or repeatedly.
Avoid contact with heat, sparks, flames or other sources of ignition.
Do not take contaminated clothings away from the work area.
Storing with combustible substances such as stained clothes or paper may cause fire by spontaneous ignition. Thus do not stack it, and keep it in a non-flammable container with cap filled with water and dispose it.
- B. Conditions for safe storage, including any incompatibilities : Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.
- Avoid direct sunlight while storing outdoor.
Storage temperature: 5 ~ 35 °C
Avoid strong oxidizing agents, acid.
Stored in an isolated place, freezing caution, high temperature body caution.
Storage temperature: 5 ~ 15 °C
Storage temperature: 15 ~ 25 °C
Storage temperature: 25 ~ 35 °C
Store in a cool, dry, well-ventilated area.
Check periodically for leaks
Store in accordance with all current law and regulations.
Store in original container only.
Prevent static electricity and do not store near heat sources.
Collect in an airtight container to dispose.
Store away from waterworks and sewers.

8. Exposure controls/personal protection

- A. Exposure Limits
- Xylene
 - ACGIH : NO DATA
 - Biological exposure indices : 尿中 Methylhippuric acids : 1.5 g/g creatinine(工作后)
 - Dimethyl carbonate
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
 - Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
 - Toluene
 - ACGIH : NO DATA
 - Biological exposure indices : 血液中 Toluene : 0.02 mg/L(工作前), 尿中 Toluene : 0.03 mg/L(工作后), 尿中(with hydrolysis) o-Cresol : 0.3 mg/g creatinine(工作后)
 - Rutile(TiO₂)
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
 - 4-Methyl-2-pentanone
 - ACGIH : TWA, 20 ppm (82 mg/m³) STEL 75 ppm (307 mg/m³)
 - Biological exposure indices : 尿中 Methyl isobutyl ketone : 1 mg/L (工作后)

- Acetic acid ethyl ester
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- Nitrocellulose
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- Ethylbenzene
 - ACGIH : NO DATA
 - Biological exposure indices : 尿中 (Mandelic acid, Phenylglyoxylic acids 合计) : 0.15 g/g creatinine(工作后)
- Acetone
 - ACGIH : NO DATA
 - Biological exposure indices : 尿中 Acetone : 50 mg/g (工作后)
- n-Butyl acetate
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- 2-Butoxyethanol
 - ACGIH : TWA, 20 ppm (97 mg/m3)
 - Biological exposure indices : 尿中 Butoxyacetic acid (BAA)(with hydrolysis) : 200 mg/g creatinine(工作后)
- Methyl Ethyl Ketone
 - ACGIH : NO DATA
 - Biological exposure indices : 尿中 Methyl ethyl ketone : 2 mg/L (工作后)
- Gum rosin
 - 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
Use the personal protect respirator for organic solvent or higher level of capacity when workers are supposed to be exposed under unsuitable respiratory working condition, or longer period exposure than standard level.
Consider warning properties before use.
Respiratory protection may be needed, while frequent use or heavy exposure.
Respiratory protection is ranked in order from minimum to maximum
If there is possibility of direct contact or exposure to these substances should wear a authorized dust-proof mask or respirator for organic compounds
- Eye protection : Use the respirator for organic solvent or higher level.
Install washing facilities and an emergency washing facilities close to workplace.
Let workers do wear the safety glasses in case hazard caused by mist may be expected.
If there is possibility of direct contact or exposure to these substances should wear authorized safty glasses or mask.
- Hand protection : Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronicle and long period exposure.
Wear the chemical protective gloves
Wear appropriate protective gloves
If there is possibility of direct contact or exposure to these substances should wear authorized safety gloves for chemicals.
- Skin protection : Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, wear the impermeable whole body protective clothing if needed.
Wear appropriate chemical protective clothing.
Wear cleanroom garment or appropriate protective clothing to prevent contamination
If there is a possibility of direct contact or exposure to the substance Wear protective clothing for chemical substances

9. Physical and chemical properties

- A. Appearance : 점성의 액체
- B. Odor : 특취
- C. Odor threshold : 자료없음
- D. PH : 자료없음
- E. Melting point/Freezing point(℃) : 자료없음
- F. Initial Boiling Point/Boiling Ranges(℃) : 자료없음
- G. Flash point(℃) : 10
- H. Evaporating Rate : 자료없음
- I. Flammability(solid, gas)(℃) : 자료없음
- J. Upper/Lower Flammability or explosive limits : 자료없음

- K. Vapour pressure : 자료없음
L. Solubility : 물 불용성
M. Vapour density : 자료없음
N. Specific gravity : 1.2 ± 0.3
O. Partition coefficient of n-octanol/water : 자료없음
P. Autoignition temperature(℃) : 자료없음
Q. Decomposition temperature(℃) : 자료없음
R. Viscosity : 95~105KU
S. Molecular weight : 자료없음

10. Stability and reactivity

- A. Chemical stability : NO DATA
B. Possibility of hazardous reactions : Do not contact with heat, spark, flame or other flammable sources
Avoid contaminants and friction
C. Conditions to avoid : Oxidation agent, metal and combustible materials
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
 Xylene
- Acute toxicity
Oral : LD50=3550 mg/kg rat
Dermal : LD50 4350 mg/kg Rabbit
Inhalation : LD50 4350 mg/kg Rabbit
- Skin corrosion/irritation : Skin irritation test in rabbits Causes moderate irritation.
- Serious eye damage/irritation : Skin irritation test in rabbits Causes moderate irritation.
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : Group 3
OSHA : NO DATA
ACGIH : A4
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice
- Reproductive toxicity : If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : In the liquid can cause chemical pneumonia if swallowed.
- Dimethyl carbonate
- Acute toxicity
Oral : LD50 = 13000 mg/kg Rat
Dermal : LD50 = 5000 mg/kg Rabbit
Inhalation : LD50 = 5000 mg/kg Rabbit
- Skin corrosion/irritation : non-irritating(rabbit)
- Serious eye damage/irritation : Mild irritant(rabbit)
- 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
- Carbomono-cyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
- 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
- Toluene
 - Acute toxicity
 - Oral : rat LD50=2600 mg/kg
 - Dermal : rabbit LD50=12,000 mg/kg
 - Inhalation : rabbit LD50=12,000 mg/kg
 - Skin corrosion/irritation : Rabbit skin irritation test using the results of the Causes moderate irritation.
 - Serious eye damage/irritation : Eyes irritant test using a rabbit raised for 6 days reversible irritation.
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Tests with negative results Guinea
 - Carcinogenicity
 - IARC : Group 3
 - OSHA : NO DATA
 - ACGIH : A4
 - NTP : NO DATA
 - EU CLP : NO DATA
 - Germ cell mutagenicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
 - Reproductive toxicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
 - STOT-single exposure : Causes acts on the central nervous system in humans, fatigue, drowsiness, dizziness, respiratory irritation, agitation, vomiting, central nervous system depression, confusion, gait abnormalities. Eyes, nose, causing irritation of the throat. In experimental animals
 - STOT-repeated exposure : Headaches accompanied by people from hearing loss or visual field constriction, or nystagmus, tremor, ataxia, loss of memory, such as chronic central nervous system disorder that appears. Noewichuk is observed. It appears kidney dysfunction such as hematuria or pro
 - Aspiration hazard : NO DATA
- Rutile(TiO2)
 - Acute toxicity
 - Oral : LD50 > 24000 mg/kg Rat
 - 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 : This risk may be increased by exposure to a case : Respiratory disorders
 - Aspiration hazard : NO DATA
- 4-Methyl-2-pentanone
 - Acute toxicity
 - Oral : LD50 2080 mg/kg Rat (NITE, ECHA)
 - Dermal : LD50 >16,000 mg/kg rabbit (NITE)
 - Inhalation : vapor LC50 8.2 ~ 16.4 mg/ℓ 4h Rat (ECHA)
 - Skin corrosion/irritation : Skin corrosion/irritation test results in rabbits, no irritation observed OECD TG 404 (ECHA)
 - Serious eye damage/irritation : As a result of severe eye damage/irritation test using rabbits, a weak irritation corneal index of 0.08, iris of 0, and congestion of 0.8 were observed OECD TG 405 (ECHA)
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Skin sensitization test on guinea pigs, did not cause sensitization (ECHA)
 - Carcinogenicity
 - IARC : Group 2B
 - OSHA : NO DATA
 - ACGIH : A3
 - NTP : NO DATA
 - EU CLP : NO DATA
 - Germ cell mutagenicity : Bacterial reversion mutation test results using in vitro microorganisms OECD TG 476, mammalian chromosome abnormality test results OECD TG 473, negative in the absence of metabolic activity system, micronucleus test results using mammalian red blood cells in vivo, negative OECD TG 474, GLP (ECHA)
 - Reproductive toxicity : As a result of developmental toxicity/teratogenicity test using rats, kidney weight increase, fetal weight loss, and ossification delay were observed, but no evidence of anomaly was observed (NOAEL)

- 1 000 ppm) (ECHA)
- STOT-single exposure : salam-eseo gido · jeommag jageugseong, dutong · hyeongijeung · guto deung-ui machwi jag-yong-eul subanhaneun jungchu singyeong jeungsang-i natanam. dongmul silheom-eseo machwi jag-yong-i natanam. (NITE)82/5000In humans, symptoms of central nervous system accompanied by anesthetic action such as airway/mucosal irritation, headache, dizziness, and vomiting appear. Anesthesia is shown in animal experiments. (NITE)
 - STOT-repeated exposure : 90-day oral repeat toxicity test OECD TG408 results NOAEL 250 mg/kg bw/day (ECHA) due to increase in kidney weight
 - Aspiration hazard : NO DATA
- Acetic acid ethyl ester
- Acute toxicity
 - Oral : LD50 5620 mg/kg Rat
 - Dermal : LD50 > 18000 mg/kg Rabbit
 - Inhalation : LD50 > 18000 mg/kg Rabbit
 - Skin corrosion/irritation : Unstimulated human and rabbit
 - Serious eye damage/irritation : Since the stimulus is shown, but recovered within seven days from the eyes of rabbits nine minutes outside (nite).
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Skin sensitization tests in humans and rabbits negative
 - Carcinogenicity
 - IARC : NO DATA
 - OSHA : NO DATA
 - ACGIH : NO DATA
 - NTP : NO DATA
 - EU CLP : NO DATA
 - Germ cell mutagenicity : In vivo micronucleus test negative
 - Reproductive toxicity : In vivo micronucleus test negative
 - STOT-single exposure : It causes upper respiratory tract irritation in humans. When exposed to near lethal levels of anesthesia and the concentration causing lung damage.
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : NO DATA
- Nitrocellulose
- Acute toxicity
 - Oral : LD50 > 5000 mg/kg Rat
 - 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 : The high concentration of people and stimulate the neck, dizziness, that is likely to cause difficulty breathing and loss of consciousness
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : NO DATA
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
- 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
- Ethylbenzene
- Acute toxicity
 - Oral : LD50 = 3500 mg/kg Rat
 - Dermal : LD50 = 15400 mg/kg Rabbit
 - Inhalation : Steam LC50 = 4000 ppm 4 hr Rat (Equivalents : 17.4 mg/L)
 - Skin corrosion/irritation : skin Irritation test result weak Irritation
 - Serious eye damage/irritation : Rabbit eye irritation test results in a slight conjunctival irritation, recoverable damage.

- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
 - IARC : Group 2B
 - OSHA : NO DATA
 - ACGIH : A3
 - NTP : NO DATA
 - EU CLP : NO DATA
- Germ cell mutagenicity : Micronucleustest Negative (7)
- Reproductive toxicity : Micronucleustest Negative (7)
- STOT-single exposure : It causes central nervous system effects in laboratory animals and airway irritation.
- STOT-repeated exposure : NO DATA
- Aspiration hazard : Hydrocarbons. Swallowing the liquid by aspiration may cause chemical pneumonia. Ties seongryul 0.74 mm² / s (25 °C)
- Acetone
 - Acute toxicity
 - Oral : LD50 = 5280 mg/kg Rat (EHC(1990), SIDS(1997))
 - Dermal : LD50 = 12870 mg/kg rabbit (EHC(1990), PATTY(1994), SIDS(1997))
 - Inhalation : LD50 = 12870 mg/kg rabbit (EHC(1990), PATTY(1994), SIDS(1997))
 - Skin corrosion/irritation : (using rabbit) skin Irritation test result non-irritating
 - Serious eye damage/irritation : Irritating to eyes of the person vapor exposure is stopped, but not sustained stimulation. The destruction of the corneal epidermis Restored in 4-6 days.
 - Respiratory sensitization : NO DATA
 - Skin sensitization : negative test result mouse, guinea pig test results negative
 - Carcinogenicity
 - IARC : NO DATA
 - OSHA : NO DATA
 - ACGIH : A4
 - NTP : NO DATA
 - EU CLP : NO DATA
 - Germ cell mutagenicity : Micronucleustest Negative
 - Reproductive toxicity : Micronucleustest Negative
 - STOT-single exposure : People in the nose, airway, bronchial irritation, exposure to high concentrations headaches, dizziness, loss of strength of the leg, causing fainting.
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : Seongryul tie 0.426 mm² / s (calculated)
- n-Butyl acetate
 - Acute toxicity
 - Oral : LD50 = 14130 mg/kg Rat
 - Dermal : LD50 = 17600 mg/kg Rabbit
 - Inhalation : LD50 = 17600 mg/kg Rabbit
 - Skin corrosion/irritation : Causes a weak stimulus person.
 - Serious eye damage/irritation : Non-irritating to rabbit eye irritation
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Not a skin sensitizer
 - 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 : Central nervous system disorders who, pulmonary edema, respiratory irritation.
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : NO DATA
- 2-Butoxyethanol
 - Acute toxicity
 - Oral : LD50 1414 mg/kg Guinea pig (OECD TG 401, GLP)
 - Dermal : LD50 >2000 mg/kg Rat (ECHA)
 - Inhalation : Vapor LC50 >7.4 mg/ℓ 7 hr Rat (ECHA)
 - Skin corrosion/irritation : As a result of skin irritation test using rabbits, it is erythema irritation 2, which is not applicable under the GHS standard, but it is sufficient to determine that it is irritating EU Method B.4 (ECHA)
 - Serious eye damage/irritation : Eye irritation test results showed conjunctival irritation index 2.6, iritis 0.56, conjunctival edema 1.8, indicating irritation OECD TG405, GLP (ECHA)
 - Respiratory sensitization : NO DATA
 - Skin sensitization : Skin sensitization test results using guinea pigs non-sensitization (OECD TG 406, ECHA)
 - Carcinogenicity
 - IARC : Group 3
 - OSHA : NO DATA
 - ACGIH : A3
 - NTP : NO DATA
 - EU CLP : NO DATA
 - Germ cell mutagenicity : Reverse mutation test using in vitro microorganisms OECD TG471, chromosomal abnormality test using mammalian cells OECD TG473 result negative, micronucleus test using mammalian bone marrow cells in vivo OECD TG474 result negative (ECHA)
 - Reproductive toxicity : 2nd generation reproductive toxicity test (NTP) results, NOAEL (parental toxicity) = 720 mg/kg bw/day due to weight loss, fertility, etc., NOAEL (F1, F2) = 720 mg/kg bw/ due to weight loss of offspring day, no effect on reproductive toxicity was observed, developmental toxicity and teratogenic effects were not observed as a result of developmental toxicity test using rats (OECD TG414) NOAEL (development) = 100

- mg/kg bw/day NOAEL (teratogenicity) > 200 mg/kg bw/day (ECHA)
- STOT-single exposure : As a result of Respiratory Irritation test using mice, RD50 2818 ppm showed minimal or no sensory stimulation (ECHA)
 - STOT-repeated exposure : As a result of a 90-day repeated oral toxicity test in rats, OECD TG408 showed some abnormalities in liver and cytoplasm in histopathological findings, but no adverse effects were observed. NOAEL male <69 mg/kg bw/day, NOAEL female <82 mg/kg bw/day 90-day inhalation repeat toxicity test using mice OECD TG413, GLP Results NOAEC <31ppm (ECHA)
 - Aspiration hazard : NO DATA
- Methyl Ethyl Ketone
- Acute toxicity
 - Oral : LD50 2737 mg/kg Rat
 - Dermal : LD50 6480 mg/kg rabbit
 - Inhalation : LD50 6480 mg/kg rabbit
 - Skin corrosion/irritation : Moderate irritation (Rabbit)
 - Serious eye damage/irritation : It appears not to be irritating by vapor exposure in humans.
 - 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 : Mammalian erythrocyte micronucleus test using Voice
 - Reproductive toxicity : Mammalian erythrocyte micronucleus test using Voice
 - STOT-single exposure : In the rat or mouse inhalation exposure test results appear in the relatively low concentration the effect on the central nervous system. It appears also affect the kidneys at concentrations in the rat courtyard. This prayer appears irritant by inhalation exposure
 - STOT-repeated exposure : NO DATA
 - Aspiration hazard : Ketones less than 13 carbon atoms
- Gum rosin
- Acute toxicity
 - Oral : LD50 = 3 mg/kg Rat
 - Dermal : LD50 = 2500 mg/kg rabbit
 - Inhalation : LD50 = 2500 mg/kg rabbit
 - Skin corrosion/irritation : Using rat skin Irritation test result weak Irritation
 - Serious eye damage/irritation : Test results using rat low irritant not irritant
 - Respiratory sensitization : Also known as skin and respiratory sensitizer
 - Skin sensitization : Reported by contact between skin sensitization
 - 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

12. Ecological information

A. Ecotoxicity

- Xylene
 - Fish : NO DATA
 - Crustaceans : NO DATA
 - Algae : NO DATA
- Dimethyl carbonate
 - Fish : NO DATA
 - Crustaceans : NO DATA
 - Algae : NO DATA
- Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - Fish : NO DATA
 - Crustaceans : NO DATA
 - Algae : NO DATA
- Toluene
 - Fish : LC50 24 mg/ℓ 96 hr *Oncorhynchus mykiss*
 - Crustaceans : EC50 11.5 mg/ℓ 48 hr *Daphnia magna*
 - Algae : NO DATA
- Rutile(TiO₂)
 - Fish : LC50 = 35.988 mg/ℓ 96 hr
 - Crustaceans : LC50 = 39.180 mg/ℓ 48 hr
 - Algae : EC50 = 24.821 mg/ℓ 96 hr
- 4-Methyl-2-pentanone
 - Fish : ECHA LD50 >179 mg/ℓ 96 hr *Brachydanio rerio* (ECHA)
 - Crustaceans : ECHA EC50 >200 mg/ℓ 48 hr *Daphnia magna* (ECHA)
 - Algae : NO DATA
- Acetic acid ethyl ester
 - Fish : LC50 230 mg/ℓ 96 hr *Pimephales promelas*
 - Crustaceans : EC50 717 mg/ℓ 48 hr *Daphnia magna*
 - Algae : EC50 1800 ~ 3200 mg/ℓ 72 hr (*Selenastrum* sp.)

- Nitrocellulose
 - Fish : LC50 = 1000 mg/ℓ 96 hr
 - Crustaceans : NO DATA
 - Algae : EC50 = 579 mg/ℓ 96 hr
 - C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - Fish : NO DATA
 - Crustaceans : NO DATA
 - Algae : NO DATA
 - Ethylbenzene
 - Fish : LC50 = 9.09 mg/ℓ 96 hr
 - Crustaceans : LC50 = 0.4 mg/ℓ 96 hr
 - Algae : NO DATA
 - Acetone
 - Fish : LC50 > 100 mg/ℓ 96 hr
 - Crustaceans : NO DATA
 - Algae : NO DATA
 - n-Butyl acetate
 - Fish : LC50 = 62 mg/ℓ 96 hr
 - Crustaceans : LC50 = 32 mg/ℓ 48 hr
 - Algae : NO DATA
 - 2-Butoxyethanol
 - Fish : LC50 1474 mg/ℓ 96 hr *Oncorhynchus mykiss*(OECD Guideline 203)
 - Crustaceans : EC50 1800 mg/ℓ 48 hr *Daphnia magna*(OECD TG 202)
 - Algae : EC50 911 mg/ℓ 72 hr *Selenastrum capricornutum*(OECD TG 201)
 - Methyl Ethyl Ketone
 - Fish : LC50 3220 mg/ℓ 96 hr *Pimephales promelas*
 - Crustaceans : EC50 5091 mg/ℓ 48 hr *Daphnia magna*
 - Algae : EC50 > 500 mg/ℓ 96 hr *Skeletonema costatum*
 - Gum rosin
 - Fish : NO DATA
 - Crustaceans : EC50 = 4.5 mg/ℓ 48 hr
 - Algae : NO DATA
- B. Persistence and degradability
- Xylene
 - Persistence : NO DATA
 - Degradability : NO DATA
 - Dimethyl carbonate
 - Persistence : NO DATA
 - Degradability : NO DATA
 - Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - Persistence : NO DATA
 - Degradability : NO DATA
 - Toluene
 - Persistence : log Kow 2.73
 - Degradability : NO DATA
 - Rutile(TiO₂)
 - Persistence : NO DATA
 - Degradability : NO DATA
 - 4-Methyl-2-pentanone
 - Persistence : log Kow 1.9 (ECHA)
 - Degradability : NO DATA
 - Acetic acid ethyl ester
 - Persistence : log Kow 0.73
 - Degradability : BOD5/COD 0.81
 - Nitrocellulose
 - Persistence : NO DATA
 - Degradability : NO DATA
 - C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - Persistence : NO DATA
 - Degradability : NO DATA
 - Ethylbenzene
 - Persistence : NO DATA
 - Degradability : NO DATA
 - Acetone
 - Persistence : NO DATA
 - Degradability : NO DATA
 - n-Butyl acetate
 - Persistence : log Kow = 1.78
 - Degradability : NO DATA
 - 2-Butoxyethanol
 - Persistence : 0.81 log Kow (25 ° C, pH=7, BASF standard method)
 - Degradability : NO DATA
 - Methyl Ethyl Ketone
 - Persistence : log Kow 0.29
 - Degradability : NO DATA
 - Gum rosin
 - Persistence : NO DATA
 - Degradability : NO DATA

C. Bioaccumulative potential

- Xylene
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 39 (%)
- Dimethyl carbonate
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- Toluene
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 86 (%) 20 day
- Rutile(TiO2)
 - Bioaccumulative potential : BCF = 10.38
 - Biodegradation : NO DATA
- 4-Methyl-2-pentanone
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 83% 28 day (ECHA)
- Acetic acid ethyl ester
 - Bioaccumulative potential : BCF 30
 - Biodegradation : 100 (%) 28 day
- Nitrocellulose
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- Ethylbenzene
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- Acetone
 - Bioaccumulative potential : NO DATA
 - Biodegradation : NO DATA
- n-Butyl acetate
 - Bioaccumulative potential : NO DATA
 - Biodegradation : Biodegradability = 98 (%)
- 2-Butoxyethanol
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 90.4 % 28 day (OECD TG 301G)
- Methyl Ethyl Ketone
 - Bioaccumulative potential : NO DATA
 - Biodegradation : 89 (%) 20 day
- Gum rosin
 - Bioaccumulative potential : NO DATA
 - Biodegradation : Biodegradability = 36 ~ 48 (%)

D. Mobility in soil

- Xylene
 - ▷ log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)
- Dimethyl carbonate
 - ▷ NO DATA
- Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - ▷ NO DATA
- Toluene
 - ▷ NO DATA
- Rutile(TiO2)
 - ▷ NO DATA
- 4-Methyl-2-pentanone
 - ▷ Koc 101.85 (Estimate)
- Acetic acid ethyl ester
 - ▷ NO DATA
- Nitrocellulose
 - ▷ NO DATA
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - ▷ NO DATA
- Ethylbenzene
 - ▷ log Kow = 3.15 (11)
- Acetone
 - ▷ NO DATA
- n-Butyl acetate
 - ▷ NO DATA
- 2-Butoxyethanol
 - ▷ NO DATA
- Methyl Ethyl Ketone
 - ▷ NO DATA
- Gum rosin
 - ▷ NO DATA

E. Other adverse effects

- Xylene

- ▷ NO DATA
- Dimethyl carbonate
 - ▷ NO DATA
- Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - ▷ NO DATA
- Toluene
 - ▷ NO DATA
- Rutile(TiO₂)
 - ▷ NO DATA
- 4-Methyl-2-pentanone
 - ▷ crustaceans(Daphnia magna) : NOEC 21 d=78 mg/L (ECHA)
- Acetic acid ethyl ester
 - ▷ NO DATA
- Nitrocellulose
 - ▷ NO DATA
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - ▷ NO DATA
- Ethylbenzene
 - ▷ NO DATA
- Acetone
 - ▷ NO DATA
- n-Butyl acetate
 - ▷ NO DATA
- 2-Butoxyethanol
 - ▷ Fish Danio rerio: NOEC14d>100 mg/L OECD TG 204, Crustacean Daphnia magna: NOEC21d=100 mg/L OECD TG 211 (ECHA)
- Methyl Ethyl Ketone
 - ▷ NO DATA
- Gum rosin
 - ▷ NO DATA

13. Disposal considerations

- A. Disposal methods : Disposal material should keep in the airtighted container, and consign according to Waste Mateial Management Act
 Pre-treat with oil-water separation method when it is available.
 Recycle the recycleable materials, such as organic solvents, and then incinerate the residue at high temperature.
 To prevent environmental pollution, dispose it to a licensed waste disposal company.
- B. Special precautions for disposal : Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems
 Discard it followed by appropriate regulations

14. Transport information

- A. UN number : 1263
- B. Proper shipping name : Paint (including paint, lacquer, enamel, colorants, shellac solutions, varnish, polish, liquid filler and liquid lacquer sealer) or related materials (including paint diluent and reductant).
- C. Hazard class : 3
- D. Packing group : II
- E. Marine pollutant : N/A
- F. Special precautions for user related to transport or transportation measures
 EmS FIRE SCHEDULE : F-E
 EmS SPILLAGE SCHEDULE : S-E

15. Regulatory information

- Xylene
 - 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) : 45.3599 kg 100 lb
 - ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
 - ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
 - ▷ EPCRA Section 313 (40CFR372.65) : pertinent
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Dimethyl carbonate
 - 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
- Carbomonocyclic-dicarboxylic anhydride polymer with alkane(C=3-7)triol and fatty acids, vegetable-oil
 - 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
- Toluene
 - 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) : 453.599 kg 1000 lb
 - ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
 - ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
 - ▷ EPCRA Section 313 (40CFR372.65) : pertinent
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Rutile(TiO2)
 - 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
- 4-Methyl-2-pentanone
 - 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) : 2267.995 kg 5000 lb
 - ▷ EPCRA Section 302 (40CFR355.30) : NO DATA
 - ▷ EPCRA Section 304 (40CFR355.40) : NO DATA
 - ▷ EPCRA Section 313 (40CFR372.65) : Applicable
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Acetic acid ethyl ester
 - 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) : 2267.995 kg 5000 lb
 - ▷ 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
- Nitrocellulose
 - Information of EU Classification
 - ▷ Classification : NO DATA
 - ▷ Risk Phrases : NO DATA
 - ▷ Safety Phrase : NO DATA

- U.S. Federal regulations
 - ▷ OSHA PROCESS SAFETY (29CFR1910.119) : pertinent
 - ▷ 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
- C(C=8-18) and C(C=10-18) unsaturated alkyl carboxylic acid, polymer with trihydroxyalkane and heteropolycycle anhydride (K5-3760)
 - 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
- Ethylbenzene
 - 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) : 453.599 kg 1000 lb
 - ▷ EPCRA Section 302 (40CFR355.30) : notapplicable
 - ▷ EPCRA Section 304 (40CFR355.40) : notapplicable
 - ▷ EPCRA Section 313 (40CFR372.65) : pertinent
 - Rotterdam Convention listed ingredients : NO DATA
 - Stockholm Convention listed ingredients : NO DATA
 - Montreal Protocol listed ingredients : NO DATA
- Acetone
 - 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) : 2267.995 kg 5000 lb
 - ▷ 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
- n-Butyl acetate
 - 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) : 2267.995 kg 5000 lb
 - ▷ 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-Butoxyethanol
 - 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
- Methyl Ethyl Ketone

- 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) : 2267.995 kg 5000 lb
 - ▷ 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
- Gum rosin
- 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

- 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 : 2020-04-03

C. Revision number and Last date revised : 2.(2022-07-29)

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