[GHS-MSDS]

1. Identification

A. Product name : HIQ HV PRIMER-SURFACER PS-240
B. Recommended Use and Restriction on Use
  1) General use : Automotive refinish
  2) Restriction on use : Recommendations for purposes other use restrictions.
C. Manufacturer / Supplier / distributor information
  1) Company name : NOROO Paint & Coatings Co., Ltd.
  2) Address : 351, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Korea
  3) Emergency telephone number : +82-31-467-6114

2. Hazard identification

A. GHS Classification : Flammable liquids Category 2 ▷Carcinogenicity Category 2 ▷Reproductive toxicity Category 2 ▷Serious eye damage/irritation Category 2A ▷Specific target organ toxicity(Single exposure) Category 1 ▷Specific target organ toxicity(Single exposure) Category 3 ▷Specific target organ toxicity(Repeated exposure) Category 1 ▷Skin corrosion/irritation Category 2

B. GHS label elements

1)Hazard symbols :

2)Signal words : DANGER

3)Hazard statements : H225 Highly flammable liquid and vapour ▷H351 Suspected of causing cancer ▷H361 Suspected of damaging fertility or the unborn child ▷H319 Causes serious eye irritation ▷H370 Causes damage to organs(Refer Section SDS 11) ▷H335+H336 May cause respiratory irritation, May cause drowsiness and dizziness. ▷H372 Causes damage to organs through prolonged or repeated exposure (Refer Section SDS 11) ▷H315 Causes skin irritation

4)Precautionary statements

- Prevention : P210 Keep away from heat/sparks/open flames/hot surfaces. ? No smoking. ▷P240 Ground/bond container and receiving equipment. ▷P241 Use explosion-proof electrical/ventilating/lighting/equipment. ▷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. ▷P201 Obtain special instructions before use. ▷P202 Do not handle until all safety precautions have been read and understood. ▷P281 Use personal protective equipment as required. ▷P264 Wash hands thoroughly after handling. ▷P260 Do not breathe dust/fume/gas/mist/vapours/spray. ▷P270 Do not eat, drink or smoke when using this product. ▷P261 Avoid breathing dust/fume/gas/mist/vapours/spray. ▷P271 Use only outdoors or in a well-ventilated area. ▷P233 Keep container tightly closed.
- Response : P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. ▷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 advice/attention. ▷P307+P311 If exposed: Call a POISON CENTER or doctor/physician. ▷P321 Specific treatment ▷P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. ▷P312 Call a POISON CENTER or doctor/physician if you feel unwell. ▷P314 Get medical advice/attention if you feel unwell. ▷P302+P352 IF ON SKIN:

Wash with plenty of soap and water. ▷P332+P313 If skin irritation occurs: Get medical advice/attention. ▷P362 Take off contaminated clothing and wash before reuse. ▷P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).

- Storage : P403+P235 Store in a well-ventilated place. Keep cool. ▷P405 Store locked up. ▷P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- 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)

Chemical Name	NFPA grade		
	Health	Flammability	Reactivity
Talc (Not containing asbestos)	1	0	0
Toluene	2	3	0
2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	NO DATA	NO DATA	NO DATA
Barium sulfate, natural	1	0	0
Rutile(TiO2)	1	0	0
Acetic acid ethyl ester	1	3	0
2-Propanol	2	3	0
4-Methyl-2-pentanone	1	3	0
Xylene	NO DATA	NO DATA	NO DATA

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
Talc (Not containing asbestos)	Talc	14807-96-6	26
Toluene	Toluene	108-88-3	24.1
2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate	-	-	18.1
Barium sulfate, natural	Barium sulfate, natural	7727-43-7	13.1
Rutile(TiO2)	Rutile(TiO2)	1317-80-2	6.1
Acetic acid ethyl ester	Acetic acid ethyl ester	141-78-6	4.1
2-Propanol	2-Propanol	67-63-0	4.1
4-Methyl-2-pentanone	4-Methyl-2-pentanone	108-10-1	3.1
Xylene	Xylene	1330-20-7	1.3

4. First-aid measures

A.Eye Contact : If irritation, pain, swelling, and tears or glaring may occur, immediately take a doctor's treatment Rinse exposed eyes with plenty of water for at least 15minutes.

B.Skin Contact : Immediately wash off with soap and water for at least 15 minutes. If irritation or pain may occur, take a doctor’s examination on exposed area. Discard clothing, and then wash off exposed area with soap and water.

C.Inhalation : Take an emergency medical examination by a doctor Discard contaminated clothing and shoes, and keep personal away. If breathing is difficult, administer oxygen Perform the artificial respiration using the pocket mask

installed the one way valves, or other inhaled medical devices. If inhaled or swallowed, do not perform the inhalation phase of breathing If the cessation of breathing may occur, perform the artificial respiration Avoid from source of exposure, and then moved into an area with fresh air

D.Ingestion Contact : It is need to be considered that early removal of some ingested material by cautious gastric lavage must be weighed against potential complications of bleeding or perforation Take an appropriate medical treatment depending on the symptoms. Get a doctor's attention immediately if ingestion of large amounts of materials. Do not induce vomiting, and then if vomiting occurs, keep head below hips to prevent aspiration into lungs. Induce vomiting

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

5.Fire-fighting measures

A.Suitable (Unsuitable) extinguishing media

1) Suitable extinguishing media : Extinguished agent as powder foam or Gas-based fire extinguishing agent, and regular foam
2) (Unsuitable) extinguishing media : Water is not an appropriate extinguished agent
3) Case of big fire : Use an appropriate protect device depend on the fire scenario Evacuate more than 800m if an explosion hazard may occur. Spread a large amount of the extinguished agent as a mist form with staying upwind

B.Specific hazards arising from the chemical

1) Pyrolysate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds
2) Fire and Explosion danger : Intermediate levels of fire hazard.

C.Special protective actions for fire-fighters

1) Personal Precautions, protective equipment : Respirator or air respirator, heat resistant clothing, heat resistant hat, heat resistant gloves, heat resistant boots
2) Emergency procedures : Keep unauthorized personnel out except the fire-suppression personnel Cool containers with water until well after fire is out. If there is no risk, move to move containers from fire area. Perform a fire fighting using an appropriate extinguished agent.

6.Accidental release measures

A.Personal Precautions, protective equipment and emergency procedures

1) Personal Precautions, protective equipment : Respirator for organic gases other appropriate protective equipment / protection / protective gloves
2) Emergency procedures : Do not contact with the skin Do work with the personal protected devices such as respirator for organic gases other appropriate protective equipment / protection / protective gloves Spread water for reducing the suppression of generated steam Take an action if there is no risk

B.Environmental precautions

1) Atmosphere : Stay upwind and keep out of low areas. Spread water for reducing the suppression of generated steam
2) 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.
3) Under water : Collect spilled material with mechanic devices Use absorbent to collect the appropriate container.

C.Methods and materials for containment and cleaning up

1) Small spill : Appropriate container for disposal of spilled material collected. Absorb for use sand or other non-combustible material.
2) Large spill : Notification to central government, local government. When emissions at least of the standard amount Keep unnecessary people away, isolate hazard area and deny entry.

7.Handling and storage

A.Precautions for safe handling : Use local ventilations and a full ventilation system when handling Close the container for minimizing the petroleum steam Ground for preventing the static discharge Keep or handle followed by Dangerous goods Safety Management Act

B.Conditions for safe storage, including any incompatibilities : Stored in an isolated place, freezing Caution, hot body care Avoid strong oxidizing agents, acid and contacts. Storage temperature: 5 ~ 35 ℃ Storage outdoors is to avoid

direct sunlight. Because evaporation and contamination concerns Keep container tightly closed in a good ventilation to the building.

8.Exposure controls/personal protection

A.Exposure Limits

1) Talc (Not containing asbestos)
   1-1.ACGIH : NO DATA
   1-2.Biological exposure indices : NO DATA

2) Toluene
   2-1.ACGIH : NO DATA
   2-2.Biological exposure indices : NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
   3-1.ACGIH : NO DATA
   3-2.Biological exposure indices : NO DATA

4) Barium sulfate, natural
   4-1.ACGIH : NO DATA
   4-2.Biological exposure indices : NO DATA

5) Rutile(TiO2)
   5-1.ACGIH : NO DATA
   5-2.Biological exposure indices : NO DATA

6) Acetic acid ethyl ester
   6-1.ACGIH : NO DATA
   6-2.Biological exposure indices : NO DATA

7) 2-Propanol
   7-1.ACGIH : NO DATA
   7-2.Biological exposure indices : NO DATA

8) 4-Methyl-2-pentanone
   8-1.ACGIH : NO DATA
   8-2.Biological exposure indices : NO DATA

10)Xylene
   10-1.ACGIH : NO DATA
   10-2.Biological exposure indices : NO DATA

B.Engineering Controls : ▷ Spread water for reducing the suppression of generated steam ▷ Stay upwind and keep out of low areas.. ▷ NO DATA. ▷ NO DATA.

C.Personal Protective Equipment

1) Respiratory protection : 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. Wear respirator should be authorized by Korea Occupational Safety and Health Agency
2) Eye protection : Let workers do wear the safety glasses in case hazard caused by mist may be expected. Cleansing Organization (saline) or install washing facilities and an emergency washing facilities in the place close to workplace. Use the protect respirator for organic solvent or higher level of capacity.
3) Hand protection : Wear the chemical protection of gloves Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronicle/long period exposure.
4) Skin protection : Wear appropriate chemical protective clothing. Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, if needed wear the impermeable whole body protective clothing.

9.Physical and chemical properties

A.Appearance : GRAY
B.Odor : solvent odor
C.Odor threshold : NO DATA
D.PH : NO DATA
E.Melting point/Freezing point : NO DATA
F.Initial Boiling Point/Boiling Ranges : 76~129℃
G.Flash point : 15
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 : higher than air
N.Specific gravity : 1.2~1.6
O.Partition coefficient of n-octanol/water : NO DATA
P.Autoignition temperature : 360℃
Q.Decomposition temperature : NO DATA
R.Viscosity : NO DATA
S.Molecular weight : NO DATA

10.Stability and reactivity

A.Chemical stability : NO DATA
B.Possibility of hazardous reactions : Avoid contaminants and friction Do not contact with heat, spark, flame or other flammable sources
C.Conditions to avoid : Oxidation agent, metal and combustable materials
D.Hazardous decomposition products : Thermal decomposition products (carbon etc.,)

11.Toxicological information

A.Information on the likely routes of exposure
  1) Respiratory tracts : Adverse lung effects, Dyspnoea, Hypothermia, Vomitting
  2) Oral : Vomitting, Diarrhea, Stomach pain, Irregular heartbeat
  3) Skin : Irritation, Burn, Adverse nerve effects
  4) Eye : Irritation, eye damage
B.Delayed and immediate effects and also chronic effects from short and long term exposure
  1) Talc (Not containing asbestos)
    1-1. Acute toxicity
      a. Oral : NO DATA
      b. Dermal : NO DATA
      c. Inhalation : NO DATA
    1-2. Skin corrosion/irritation : 300㎍/3day(human) : weak stimulus
    1-3. Serious eye damage/irritation : NO DATA
    1-4. Respiratory sensitization : NO DATA
    1-5. Skin sensitization : NO DATA
    1-6. Carcinogenicity
      6-1. IARC : Group 2B
      6-2. OSHA : NO DATA
      6-3. ACGIH : A4
      6-4. NTP : NO DATA
      6-5. EU CLP : NO DATA
    1-7. Germ cell mutagenicity : Salmonella species / Negative
    1-8. Reproductive toxicity : Salmonella species / Negative

1-9. STOT-single exposure : NO DATA
1-10. STOT-repeated exposure : NO DATA
1-11. Aspiration hazard : NO DATA

2) Toluene
2-1. Acute toxicity
a. Oral : rat LD50=2600 mg/kg
b. Dermal : rabbit LD50=12,000 mg/kg
c. Inhalation : rabbit LD50=12,000 mg/kg
2-2. Skin corrosion/irritation : Rabbit skin irritation test using the results of the Causes moderate irritation.
2-3. Serious eye damage/irritation : Eyes irritant test using a rabbit raised for 6 days reversible irritation.
2-4. Respiratory sensitization : NO DATA
2-5. Skin sensitization : Tests with negative results Guinea
2-6. Carcinogenicity
6-1. IARC : Group 3
6-2. OSHA : NO DATA
6-3. ACGIH : A4
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA
2-7. Germ cell mutagenicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
2-8. Reproductive toxicity : Dominant lethal test negative, positive micronucleus test, chromosome aberration test positive
2-9. 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
2-10. 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
2-11. Aspiration hazard : NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
3-1. Acute toxicity
a. Oral : NO DATA
b. Dermal : NO DATA
c. Inhalation : NO DATA
3-2. Skin corrosion/irritation : NO DATA
3-3. Serious eye damage/irritation : NO DATA
3-4. Respiratory sensitization : NO DATA
3-5. Skin sensitization : NO DATA
3-6. Carcinogenicity
6-1. IARC : NO DATA
6-2. OSHA : NO DATA
6-3. ACGIH : NO DATA
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA
3-7. Germ cell mutagenicity : NO DATA
3-8. Reproductive toxicity : NO DATA
3-9. STOT-single exposure : NO DATA
3-10. STOT-repeated exposure : NO DATA
3-11. Aspiration hazard : NO DATA

4) Barium sulfate, natural
4-1. Acute toxicity

a. Oral : LD50 > 3000 mg/kg Rat
b. Dermal : NO DATA
c. Inhalation : NO DATA

4-2. Skin corrosion/irritation : Non-irritating to human
4-3. Serious eye damage/irritation : e irritation have been reported in humans.
4-4. Respiratory sensitization : NO DATA
4-5. Skin sensitization : NO DATA
4-6. Carcinogenicity
6-1. IARC : NO DATA
6-2. OSHA : NO DATA
6-3. ACGIH : NO DATA
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA
4-7. Germ cell mutagenicity : NO DATA
4-8. Reproductive toxicity : NO DATA
4-9. STOT-single exposure : NO DATA
4-10. STOT-repeated exposure : NO DATA
4-11. Aspiration hazard : NO DATA

5) Rutile(TiO2)
5-1. Acute toxicity
a. Oral : LD50 > 24000 mg/kg Rat
b. Dermal : NO DATA
c. Inhalation : NO DATA

5-2. Skin corrosion/irritation : NO DATA
5-3. Serious eye damage/irritation : NO DATA
5-4. Respiratory sensitization : NO DATA
5-5. Skin sensitization : NO DATA
5-6. Carcinogenicity
6-1. IARC : NO DATA
6-2. OSHA : NO DATA
6-3. ACGIH : NO DATA
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA
5-7. Germ cell mutagenicity : NO DATA
5-8. Reproductive toxicity : NO DATA
5-9. STOT-single exposure : NO DATA
5-10. STOT-repeated exposure : This risk may be increased by exposure to a case : Respiratory disorders
5-11. Aspiration hazard : NO DATA

6) Acetic acid ethyl ester
6-1. Acute toxicity
a. Oral : LD50 5620 mg/kg Rat
b. Dermal : LD50 > 18000 mg/kg Rabbit
c. Inhalation : LD50 > 18000 mg/kg Rabbit

6-2. Skin corrosion/irritation : Unstimulated human and rabbit
6-3. Serious eye damage/irritation : Since the stimulus is shown, but recovered within seven days from the eyes of rabbits nine minutes outside (nite).
6-4. Respiratory sensitization : NO DATA
6-5. Skin sensitization : Skin sensitization tests in humans and rabbits negative
6-6. Carcinogenicity
6-1. IARC : NO DATA
6-2. OSHA : NO DATA
6-3. ACGIH : NO DATA

6-4. NTP : NO DATA
6-5. EU CLP : NO DATA

6-7. Germ cell mutagenicity : In vivo micronucleus test negative
6-8. Reproductive toxicity : In vivo micronucleus test negative
6-9. 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.
6-10. STOT-repeated exposure : NO DATA
6-11. Aspiration hazard : NO DATA

7) 2-Propanol

7-1. Acute toxicity
a. Oral : LD50 = 4710 mg/kg Rat
b. Dermal : LD50 = 12870 mg/kg rabbit
c. Inhalation : LD50 = 12870 mg/kg rabbit

7-2. Skin corrosion/irritation : (using rabbit) skin Irritation test result weak Irritation and in people non-irritating
7-3. Serious eye damage/irritation : The rabbit eye irritation test results of weak or too irritating impartial
7-4. Respiratory sensitization : NO DATA
7-5. Skin sensitization : Guinea pig test results negative
7-6. Carcinogenicity
6-1. IARC : Group 3
6-2. OSHA : NO DATA
6-3. ACGIH : A4
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA

7-7. Germ cell mutagenicity : (Using mouse bone marrow cells)Micronucleus test - Negative
7-8. Reproductive toxicity : (Using mouse bone marrow cells)Micronucleus test - Negative
7-9. STOT-single exposure : By inhalation exposure in rats decreased the activity is displayed. Stimulation of the digestive tract in humans during acute intoxication, blood pressure, body temperature, such as depression, central nervous system symptoms, renal failure appears.
7-10. STOT-repeated exposure : In mice it was 4 gaewol inhalation exposure experiment reported that the effect on the blood vessels, liver, spleen, kidneys and may impact on the anesthetic action is recognized
7-11. Aspiration hazard : Test mice when administered within 24 hours of the spectacle of death from cardiopulmonary arrest is recognized, an

8) 4-Methyl-2-pentanone

8-1. Acute toxicity
a. Oral : LD50 = 2080 mg/kg Rat
b. Dermal : LD50 = 3000 mg/kg rabbit
c. Inhalation : LD50 = 3000 mg/kg rabbit

8-2. Skin corrosion/irritation : Using the rabbit and guinea pig Causes testresult weak stimulus
8-3. Serious eye damage/irritation : Non-irritating
8-4. Respiratory sensitization : NO DATA
8-5. Skin sensitization : negative test results using guinea pig
8-6. Carcinogenicity
6-1. IARC : Group 2B
6-2. OSHA : NO DATA
6-3. ACGIH : A3
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA

8-7. Germ cell mutagenicity : Using mammalian erythrocytes Micronucleustest Negative
8-8. Reproductive toxicity : Rats were pregnant and inhalation toxicity test using mice results in decreased fetal body weight dose appears to be toxic to mother animals or the delayed ossification was seen was not teratogenic, reproductive toxicity have not been reported in humans

8-9. STOT-single exposure : Person, in prayer mucosal irritation, headache, dizziness, vomiting and other symptoms of central nervous system acting anesthetic appears to involve. Narcotic effects in animal experiments appears.
8-10. STOT-repeated exposure : It appears symptoms of exhaustion, feeling, headache, heartburn, stomach pain, vomiting, sore throat, etc. In the eyes of the people.
8-11. Aspiration hazard : NO DATA

10) Xylene
10-1. Acute toxicity
a. Oral : LD50=3550 mg/kg rat
b. Dermal : LD50 4350 mg/kg Rabbit
c. Inhalation : LD50 4350 mg/kg Rabbit
10-2. Skin corrosion/irritation : Skin irritation test in rabbits Causes moderate irritation.
10-3. Serious eye damage/irritation : Skin irritation test in rabbits Causes moderate irritation.
10-4. Respiratory sensitization : NO DATA
10-5. Skin sensitization : NO DATA
10-6. Carcinogenicity
6-1. IARC : Group 3
6-2. OSHA : NO DATA
6-3. ACGIH : A4
6-4. NTP : NO DATA
6-5. EU CLP : NO DATA
10-7. Germ cell mutagenicity : If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice
10-8. Reproductive toxicity : If three people a voice dynamics, somatic cell mutagenicity tests in vivo (micronucleus test, chromosome test) Voice
10-9. STOT-single exposure : NO DATA
10-10. STOT-repeated exposure : NO DATA
10-11. Aspiration hazard : In the liquid can cause chemical pneumonia if swallowed.

12.Ecological information

A.Ecotoxicity

1) Talc (Not containing asbestos)
1-1. Fish : LC50 > 100000 mg/ℓ 24 hr Brachydanio rerio
1-2. Crustaceans : LC50 = 94983.781 mg/ℓ 48 hr
1-3. Algae : LC50 = 48545.539 mg/ℓ

2) Toluene
2-1. Fish : LC50 24 mg/ℓ 96 hr Oncorhynchus mykiss
2-2. Crustaceans : EC50 11.5 mg/ℓ 48 hr Daphnia magna
2-3. Algae : NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
3-1. Fish : NO DATA
3-2. Crustaceans : NO DATA
3-3. Algae : NO DATA

4) Barium sulfate, natural
4-1. Fish : NO DATA
4-2. Crustaceans : EC50 = 32 mg/ℓ 48 hr Daphnia magna
4-3. Algae : EC50 = 1890.263 mg/ℓ 96 hr

5) Rutile(TiO2)
5-1. Fish : LC50 = 35.988 mg/ℓ 96 hr
5-2. Crustaceans : LC50 = 39.180 mg/ℓ 48 hr
5-3. Algae : EC50 = 24.821 mg/ℓ 96 hr

6) Acetic acid ethyl ester

6-1. Fish : LC50 230 mg/ℓ 96 hr Pimephales promelas
6-2. Crustaceans : EC50 717 mg/ℓ 48 hr Daphnia magna
6-3. Algae : EC50 1800 ~ 3200 mg/ℓ 72 hr (Selenastrum sp.)

7) 2-Propanol
7-1. Fish : LC50 > 100 mg/ℓ 96 hr
7-2. Crustaceans : NO DATA
7-3. Algae : EC50 = 2.2 mg/ℓ 96 hr

8) 4-Methyl-2-pentanone
8-1. Fish : LC50 = 540 mg/ℓ 96 hr
8-2. Crustaceans : EC50 = 170 mg/ℓ 48 hr
8-3. Algae : NO DATA

10) Xylene
10-1. Fish : NO DATA
10-2. Crustaceans : NO DATA
10-3. Algae : NO DATA

B.Persistence and degradability

1) Talc (Not containing asbestos)
1-1. Persistence : log Kow = -1.50
1-2. Degradability : NO DATA

2) Toluene
2-1. Persistence : log Kow 2.73
2-2. Degradability : NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
3-1. Persistence : NO DATA
3-2. Degradability : NO DATA

4) Barium sulfate, natural
4-1. Persistence : log Kow = 0.63
4-2. Degradability : NO DATA

5) Rutile(TiO2)
5-1. Persistence : NO DATA
5-2. Degradability : NO DATA

6) Acetic acid ethyl ester
6-1. Persistence : log Kow 0.73
6-2. Degradability : BOD5/COD 0.81

7) 2-Propanol
7-1. Persistence : NO DATA
7-2. Degradability : NO DATA

8) 4-Methyl-2-pentanone
8-1. Persistence : log Kow = 1.38
8-2. Degradability : NO DATA

10) Xylene
10-1. Persistence : NO DATA
10-2. Degradability : NO DATA

C.Bioaccumulative potential

1) Talc (Not containing asbestos)
1-1. Bioaccumulative potential : NO DATA
1-2. Biodegration : NO DATA

2) Toluene
2-1. Bioaccumulative potential : NO DATA
2-2. Biodegration : 86 (%) 20 day

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
3-1. Bioaccumulative potential : NO DATA

3-2. Biodegration : NO DATA

4) Barium sulfate, natural

4-1. Bioaccumulative potential : BCF = 3.162

4-2. Biodegration : NO DATA

5) Rutile(TiO2)

5-1. Bioaccumulative potential : BCF = 10.38

5-2. Biodegration : NO DATA

6) Acetic acid ethyl ester

6-1. Bioaccumulative potential : BCF 30

6-2. Biodegration : 100 (%) 28 day

7) 2-Propanol

7-1. Bioaccumulative potential : NO DATA

7-2. Biodegration : NO DATA

8) 4-Methyl-2-pentanone

8-1. Bioaccumulative potential : NO DATA

8-2. Biodegration : NO DATA

10) Xylene

10-1. Bioaccumulative potential : NO DATA

10-2. Biodegration : 39 (%)

D.Mobility in soil

1) Talc (Not containing asbestos)

▷ NO DATA

2) Toluene

▷ NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate

▷ NO DATA

4) Barium sulfate, natural

▷ NO DATA

5) Rutile(TiO2)

▷ NO DATA

6) Acetic acid ethyl ester

▷ NO DATA

7) 2-Propanol

▷ NO DATA

8) 4-Methyl-2-pentanone

▷ NO DATA

10) Xylene

▷ log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)

E.Other adverse effects

1) Talc (Not containing asbestos)

▷ NO DATA

2) Toluene

▷ NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate

▷ NO DATA

4) Barium sulfate, natural

▷ NO DATA

5) Rutile(TiO2)

▷ NO DATA

6) Acetic acid ethyl ester

▷ NO DATA

7) 2-Propanol

▷ NO DATA

8) 4-Methyl-2-pentanone
▷ NO DATA

10) Xylene
▷ NO DATA

13.Disposal considerations

A.Disposal methods : Spilled 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 : 1263

B.Proper shipping name : PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

C.Hazard class : 3

D.Packing group : II

E.Marine pollutant : be applicable

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

1) EmS FIRE SCHEDULE : F-E

2) EmS SPILLAGE SCHEDULE : S-E

15. Regulatory information

1) Talc (Not containing asbestos)

1-1. Information of EU Classification

▷ Classification : NO DATA

▷ Risk Phrases : NO DATA

▷ Safety Phrase : NO DATA

1-2. 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

1-3. Rotterdam Convention listed ingredients : NO DATA

1-4. Stockholm Convention listed ingredients : NO DATA

1-5. Montreal Protocol listed ingredients : NO DATA

2) Toluene

2-1. Information of EU Classification

▷ Classification : NO DATA

▷ Risk Phrases : NO DATA

▷ Safety Phrase : NO DATA

2-2. 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
2-3. Rotterdam Convention listed ingredients : NO DATA
2-4. Stockholm Convention listed ingredients : NO DATA
2-5. Montreal Protocol listed ingredients : NO DATA

3) 2-Methyl-2-propenoic acid polymer with butyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate
3-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
3-2. 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
3-3. Rotterdam Convention listed ingredients : NO DATA
3-4. Stockholm Convention listed ingredients : NO DATA
3-5. Montreal Protocol listed ingredients : NO DATA

4) Barium sulfate, natural
4-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
4-2. 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
4-3. Rotterdam Convention listed ingredients : NO DATA
4-4. Stockholm Convention listed ingredients : NO DATA
4-5. Montreal Protocol listed ingredients : NO DATA

5) Rutile(TiO2)
5-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
5-2. 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
5-3. Rotterdam Convention listed ingredients : NO DATA
5-4. Stockholm Convention listed ingredients : NO DATA
5-5. Montreal Protocol listed ingredients : NO DATA

6) Acetic acid ethyl ester
6-1. Information of EU Classification
▷ Classification : NO DATA

▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA

6-2. 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

6-3. Rotterdam Convention listed ingredients : NO DATA
6-4. Stockholm Convention listed ingredients : NO DATA
6-5. Montreal Protocol listed ingredients : NO DATA

7) 2-Propanol
7-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA

7-2. 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) : pertinent

7-3. Rotterdam Convention listed ingredients : NO DATA
7-4. Stockholm Convention listed ingredients : NO DATA
7-5. Montreal Protocol listed ingredients : NO DATA

8) 4-Methyl-2-pentanone
8-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA

8-2. 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) : pertinent

8-3. Rotterdam Convention listed ingredients : NO DATA
8-4. Stockholm Convention listed ingredients : NO DATA
8-5. Montreal Protocol listed ingredients : NO DATA

10)Xylene
10-1. Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA

10-2. 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

10-3. Rotterdam Convention listed ingredients : NO DATA
10-4. Stockholm Convention listed ingredients : NO DATA

10-5. Montreal Protocol listed ingredients : NO DATA

16.Other information

A.Reference : Occupational Health and Safety Act
Korea Industrial Safety Corporation Preparation of Material Safety Data Sheet
KOSHA CODE W-05-2007【The guideline for MSDS , 2012.】
B.Issue date : 2016-03-23 오전 11:48:40
C.Revision number and Last date revised : 4.(2016-11-22 오후 3:20:44)
D.Other : " WWW.NOROO.CO.KR"