

Material Safety Data Sheet(MSDS)

This Material Safety Data Sheet(MSDS) has been provided

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1. Product Name : TECTYL CUT 312V
2. Advisable use and Restriction
 - Advisable use : Insoluble Metal Cutting Oil
 - Restriction :
 - Do not use product for any other non-recommended purposes
3. Manufacturer information
 - Manufacture information : KOREA HOUGHTON CORPORATION 20-31, Seobunam-ro 151beon-gil, Seonjang-myeon, Asan-si, Chungnam-do, S.KOREA (+82-2-3284-0817)
 - Company : KOREA HOUGHTON CORPORATION
 - Address : 20-31, Seobunam-ro 151beon-gil, Seonjang-myeon, Asan-si, Chungnam-do, S.KOREA
 - Information service or emergency number : +82-2-3284-0817
 - Dept. responsible for information/contact number : KOREA HOUGHTON CORPORATION R&D CENTER Technology & Management Team

2. HAZARD IDENTIFICATION

1. Hazard classification
 - ACUTE TOXICITY(Inhalation:Dust/mist) Category 4
 - SKIN CORROSION/IRRITATION Category 2
 - SERIOUS EYE DAMAGE/EYE IRRITATION Category 2
 - ASPIRATION HAZARD Category 2
 - LONG-TERM AQUATIC HAZARD Category 2

2. Allocation label elements

- Symbol



- Signal word : WARNING

- Hazard statements

H305 May be harmful if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H411 Toxic to aquatic life with long lasting effects.

○ Precautionary statements

– Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

– Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses` if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/physician you feel unwell.

P321 Specific treatment (see ... on this label).

P331 Do NOT induce vomiting.

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

– Storage

P405 Store locked up.

– Disposal

P501 Dispose of contents/container to ...

3. Other hazard information not included in hazard classification (NFPA)

※ No NFPA data of the product. thus NFPA data was described by the product component.

Chemical Name	NFPA Level		
	Health	Flamm	Reactivity
1. DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC	1	1	0
2. DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	1	1	0
3. ALKANES, C14-17, CHLORO	1	1	1
4. Substance1	0	1	0
5. Substance2	1	No Data	0
6. Substance3	1	1	0
7. Substance4	1	1	0

8. Substance5	2	1	0
---------------	---	---	---

3. INGREDIENT INFORMATION

Components	Common name	CAS No.	PCT(W%)
1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC	64742-55-8	55.0 ~ 65.0
2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	64742-54-7	15.0 ~ 25.0
3) ALKANES, C14-17, CHLORO	ALKANES, C14-17, CHLORO	85535-85-9	5.0 ~ 15.0
4) Substance1	-	-	5.0 ~ 15.0
5) Substance2	-	-	1.0 ~ 5.0
6) Substance3	-	-	1.0 ~ 5.0
7) Substance4	-	-	0.1 ~ 1.0
8) Substance5	-	-	0.1 ~ 1.0

4. FIRST AID MEASURES

1. Following eye contact

- Get medical aid immediately.
- If eye irritation persists: Get medical advice/attention.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses` if present and easy to do. Continue rinsing.
- In case of contact with material, immediately flush eyes with running water for at least 15 minutes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Seek immediate medial assistance.

2. Following skin contact

- Call a POISON CENTER or doctor/physician you feel unwell.
- For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.
- For minor skin contact, avoid spreading material on unaffected skin.
- Get medical aid immediately.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation occurs: Get medical advice/ attention.
- In case of contact with material, immediately flush skin with running water for at least 15 minutes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

least 20 minutes.

- Launder contaminated clothing and shoes before re-use.
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medical assistance.
- Take off contaminated clothing and wash before reuse.

3. Following inhalation

- Administer oxygen if breathing is difficult.
- Do NOT induce vomiting.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Give artificial respiration if victim is not breathing.
- If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Keep victim warm and quiet.
- Move to fresh air.
- Seek immediate medical assistance.

4. Following ingestion

- Do NOT induce vomiting.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Get medical aid immediately.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- If unconscious but breathing, never give anything by mouth.
- Seek immediate medical assistance.

5. Advice to physician

- Do not apply drugs of the adrenaline ephedrine group.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE FIGHTING MEASURES

1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media
 - Regular foam., Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material., Use dry sand or earth to smother fire., Water spray., CO2., Dry chemical.
- Unsuitable extinguishing media
 - High-pressure water., Direct water.

○ Large fire

- Alcohol-resistant foam., CO2., Water spray/fog., Dry chemical., Excess water., Foam.

2. Special hazards arising from the substance

○ Pyrolytic product

- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

○ Risk of fire and explosion

- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- May ignited from heat, friction or contamination.
- Some may burn but none ignite readily.

3. Special protective equipment for firefighters

- Contact may cause burns to skin and eyes.
- Dike fire-control water for later disposal; do not scatter the material.
- Evacuate area and fight fire from a safe distance.
- Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Fire involving Tanks: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Move containers from fire area if you can do it without risk.
- Rescuers should put on appropriate protective gear.
- Runoff may cause pollution.
- Substance may be transported hot.
- Substance may be transported in a molten form.

6. ACCIDENTAL RELEASE MEASURES

1. Health considerations and protective equipment

- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Clean up spills immediately, observing precautions in Protective Equipment section.
- Cover with plastic sheet to prevent spreading.
- Do not enter areas which have more than 23.5% oxygen in the atmosphere, without respirator or air supplied mask.

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Please note that materials and conditions to be avoided.
- Prevent dust cloud.
- Stop leak if you can do it without risk.
- Ventilate the contaminated area.

2. Environmental precautions

- Avoid release to the environment.
- Keep out of waterways.
- Prevent entry into waterways, sewers, basements or confined areas.

3. For cleaning up

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Absorb the liquid and scrub the area with detergent and water.
- Collect spillage.
- Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- Large Spill: Dike far ahead of liquid spill for later disposal.
- Reduce airborne dust and prevent scattering by moistening with water.
- Small Spill: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
- Small Spill: Flush area with flooding quantities of water.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. HANDLING AND STORAGE

1. Precautions for safe handling

- Avoid any skin and eye contact when insert undiluted solution. Wash ... thoroughly after handling.
- Caution: Dangerous fire hazard when exposed to heat, or flame, sparks.
- Use adequate machine for prevention when package handling.
- Wear an appropriate Personal protection. (See Exposure Controls/Personal Protection section.)

2. Conditions for safe storage (including any incompatibilities.

- Choose a place that can be protected from strong oxidizers and acid.
- Drum Handling: Must work at safe place., Loading more than 3 stack is prohibited.
- Store containers: AVOID the place where can be damage and contamination.

- Store in a cool/low-temperature, well-ventilated {dry} place {away from heat and ignition sources}

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

1. Exposure exposure limits, Biological exposure standard :
 - ※ No exposure limits and biological exposure data of the product. thus data was described
- 1) **DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 2) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 3) **ALKANES, C14-17, CHLORO**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 4) **Substance1**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 5) **Substance2**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 6) **Substance3**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 7) **Substance4**
 - Other regulation (Domestic) : Not established
 - ACGIH : Not established
 - Biological standard : Not established
- 8) **Substance5**
 - Other regulation (Domestic) :
 - TWA : 2mg/m³;
 - STEL : 20mg/m³;
 - ACGIH : Not established

○ Biological standard : Not established

2. Appropriate engineering controls

- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
- Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
- Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

3. Personal protection

○ Respiratory protection

- If high frequency of use or exposure, wear air respirator.
- Wear breathing protection, which needs a confirmation from the Korea Occupational Safety and Health Agency.

○ Eye protection

- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Wear face shield to protect eyes from scattering dust or hazardous liquid.
- Wear Non-moisture permeable goggle for dust protection.

○ Hand protection

- Wear Non-moisture permeable chemical resistance protective gloves(latex, nitrile rubber, PVC) for prevent skin contact.

○ Body protection

- When contact is likely wear chemical resistant, oil and grease resistant, non-moisture permeable shoes and clothes.

9. PHYSICAL AND CHEMICAL PROPERTIES

1. Appearance : Brown

2. Odour : Mild

3. Odour threshold : No data available

4. pH Values : No data available

5. Melting point/freezing point : No data available

6. Initial boiling point and boiling range : No data available

7. Flash point : 164℃

8. Evaporation rate : No data available

9. Flammability(solid, gas) : Not applicable

10. Upper/lower flammability or explosive limits : No data available

11. Solubility : No data available

12. Vapour pressure : No data available

13. Relative density : 0.93(15/4°C)
14. n-octanol/water partition coefficient : No data available
15. Auto ignition temperature : No data available
16. Decomposition temperature : No data available
17. Vapor Densities : No data available
18. Viscosity : 13.58(40°C, mm²/s)
19. Molecular weight(mass) : No data available

10. STABILITY AND REACTIVITY

1. Stability and hazardous reactivity
 - Containers may explode when heated.
 - Fire may produce irritating and/or toxic gases.
 - Fire may produce irritating, corrosive and/or toxic gases.
 - May cause toxic effects if inhaled.
 - Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
 - Some liquids produce vapors that may cause dizziness or suffocation.
 - Some may burn but none ignite readily.
 - Stable under normal temperatures and pressures.
2. Conditions to avoid
 - Heat.
 - Ignition source(heat, spark, flame, etc.).
3. Incompatible materials
 - Combustibles, reducing material.
 - Combustibles.
 - Irritating and/or toxic gas.
4. Hazardous decomposition products
 - Corrosive/toxic fume.
 - During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
 - Irritating and/or toxic gas.
 - Irritating, corrosive and/or toxic gas.

11. TOXICOLOGICAL INFORMATION

1. Exposure route information
 - Following eye contact : Irritating
 - Following ingestion : Allergic reaction, Aspiration hazard, Dermatological disorders, Diarrhea, Dizziness, Dyspnoea, Headache, Irritating, Orientation recover, Pleurodynia, Sicchasia, Sleepiness, Stomachache, Vomiting

- Following inhalation : Irritating, Pleurodynia, Pulmonary abnormality
- Following skin contact : Allergic reaction, Dermatological disorders, Irritating, Mild irritating

2. Health hazard information

※ No data of the product. thus data was described by the product component.

1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC

- ACUTE TOXICITY
 - Oral : Not classified / LD50 > 5000 mg/kg Rat
 - Dermal : Not classified / LD50 > 2000 mg/kg Rabbit
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
- ACUTE TOXICITY
 - Inhalation-Dust/mist : Category 4 / LC50 2.18 mg/L Rat
- SKIN CORROSION/IRRITATION : Category 2 / Irritating Rabbit
- SERIOUS EYE DAMAGE/EYE IRRITATION : Category 2 / Not irritating Rabbit
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Not sensitising Guinea pig
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable (Excluded if under 3% of DMSO extract, measured by IP346 method)
- GERM CELL MUTAGENICITY : Not classified / Negative Mouse
- REPRODUCTIVE TOXICITY : Not classified / Reproductive performance was not adversely affected at any dose level evaluated. Rat
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / No systemic effects were observed. Rat
- ASPIRATION HAZARD : No data available

2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- ACUTE TOXICITY
 - Oral : Not classified / LD50 > 5000 mg/kg Rat
 - Dermal : Not classified / LD50 > 2000 mg/kg Rabbit
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
- ACUTE TOXICITY

- Inhalation-Dust/mist : Category 4 / LC50 2.18 mg/L Rat
- SKIN CORROSION/IRRITATION : Not classified / Not irritating Rabbit
- SERIOUS EYE DAMAGE/EYE IRRITATION : Not classified / Not irritating Rabbit
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Not sensitising Guinea pig
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable (Excluded if under 3% of DMSO extract, measured by IP346 method)
- GERM CELL MUTAGENICITY : Not classified / Negative CHO cell
- REPRODUCTIVE TOXICITY : Not classified / Reproductive performance was not adversely affected at any dose level evaluated. Rat
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / No systemic effects were observed. Rat
- ASPIRATION HAZARD : No data available

3) ALKANES, C14-17, CHLORO

- ACUTE TOXICITY
 - Oral : Not classified / LD50 2000
 - Dermal : No data available
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
 - Inhalation-Dust/mist : No data available
- SKIN CORROSION/IRRITATION : No data available
- SERIOUS EYE DAMAGE/EYE IRRITATION : No data available
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Not sensitising Guinea pig
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable

- GERM CELL MUTAGENICITY : Not classified / Negative Salmonella typhimurium
- REPRODUCTIVE TOXICITY : Not classified / No deaths and no significant changes in appearance, behaviour at 1000, 1500, 2500 mg/kg/day in rat during 6 – 19 gestation. No maternal or embryotoxic effects observed in any group. Rat
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : Not classified / Muscular flaccidity, poloerection and sluggish behaviour reported. Renal necrosis. Fatty degeneration of liver, spleen and thymus appeared reactive. Severe kidney damage at 4000 mg/kg. Rat
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Category 2 / It was observed Hepatocellular(625mg/kg) and increase of liver and kidney weight (100 & amp; 625mg/kg) in animal experiments. Laboratory animal
- ASPIRATION HAZARD : No data available

4) Substance1

- ACUTE TOXICITY
 - Oral : No data available
 - Dermal : No data available
 - Inhalation–Gases : No data available
 - Inhalation–Vapours : No data available
 - Inhalation–Dust/mist : No data available
- SKIN CORROSION/IRRITATION : No data available
- SERIOUS EYE DAMAGE/EYE IRRITATION : No data available
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : No data available
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : No data available
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : No data available
- ASPIRATION HAZARD : No data available

5) Substance2

- ACUTE TOXICITY
 - Oral : No data available
 - Dermal : No data available

- Inhalation-Gases : No data available
- Inhalation-Vapours : No data available
- Inhalation-Dust/mist : No data available
- SKIN CORROSION/IRRITATION : No data available
- SERIOUS EYE DAMAGE/EYE IRRITATION : No data available
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : No data available
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : No data available
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : No data available
- ASPIRATION HAZARD : No data available

6) Substance3

- ACUTE TOXICITY
 - Oral : No data available
 - Dermal : No data available
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
 - Inhalation-Dust/mist : No data available
- SKIN CORROSION/IRRITATION : No data available
- SERIOUS EYE DAMAGE/EYE IRRITATION : No data available
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : No data available
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable

- GERM CELL MUTAGENICITY : No data available
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : No data available
- ASPIRATION HAZARD : No data available

7) Substance4

- ACUTE TOXICITY
 - Oral : Not classified / LD50 5000 mg/kg Rat
 - Dermal : No data available
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
 - Inhalation-Dust/mist : No data available
- SKIN CORROSION/IRRITATION : Category 2 / Irritating
- SERIOUS EYE DAMAGE/EYE IRRITATION : Category 2 / Irritating
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Not sensitising Guinea pig
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : No data available
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : Category 2 / Decrease of body weight, astraphobia, thymus atrophy
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : No data available
- ASPIRATION HAZARD : No data available

8) Substance5

- ACUTE TOXICITY
 - Oral : Not classified / LD50 > 2930 mg/kg Rat
 - Dermal : Not classified / LD50 > 2000 mg/kg Rat
 - Inhalation-Gases : No data available
 - Inhalation-Vapours : No data available
 - Inhalation-Dust/mist : No data available
- SKIN CORROSION/IRRITATION : Not classified / Slightly irritating Rabbit

- SERIOUS EYE DAMAGE/EYE IRRITATION : Not classified / Slightly irritating Rabbit
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Not sensitising
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : 3
 - OSHA : Not applicable
 - ACGIH : A4
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : Not classified / Negative
- REPRODUCTIVE TOXICITY : Not classified / The dose levels administered in the study produced no adverse effect on reproductive and neurobehavioural parameters.
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / NOAEL 450 mg/kg Rat
- ASPIRATION HAZARD : No data available

12. ECOLOGICAL INFORMATION

1. Aquatic toxicity

1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC

- Fish : LC50 > 5000 mg/L Fish
- Crustacea : EC50 > 1000 mg/L Aquatic invertebrates
- Aquatic algae : NOEC >= 100 mg/L Aquatic algae

2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- Fish : LC50 > 100 mg/L Fish
- Crustacea : LC50 > 10000 mg/L Aquatic invertebrates
- Aquatic algae : NOEC >= 100 mg/L Aquatic algae

3) ALKANES, C14-17, CHLORO

- Fish : LC50 > 10000 mg/L Fish
- Crustacea : EC50 0.0059 mg/L Aquatic invertebrates
- Aquatic algae : EC50 > 3.2 mg/L Aquatic algae

4) Substance1

- Fish : LC50 7.3 mg/L Fish
- Crustacea : No data available
- Aquatic algae : No data available

5) Substance2

- Fish : No data available
- Crustacea : No data available
- Aquatic algae : No data available

6) Substance3

- Fish : No data available
- Crustacea : No data available
- Aquatic algae : No data available

7) Substance4

- Fish : LC50 25 mg/L Fish
- Crustacea : No data available
- Aquatic algae : No data available

8) Substance5

- Fish : No data available
- Crustacea : EC50 0.48 mg/L Aquatic invertebrates
- Aquatic algae : EC50 > 0.42 mg/L Aquatic algae

2. Persistence and degradation

1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 6

2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 6

3) ALKANES, C14–17, CHLORO

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 5.47

4) Substance1

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 7.09

5) Substance2

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 13.84

6) Substance3

- Degradation : No data available
- n-octanol water partition coefficient : No data available

7) Substance4

- Degradation : No data available
- n-octanol water partition coefficient : No data available

8) Substance5

- Degradation : BOD 4.5 %
- n-octanol water partition coefficient : log Kow 5.1

3. Bioaccumulative potential

1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC

- Bioaccumulation : No data available
- Biodegradation : BOD 6 %

2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- Bioaccumulation : No data available
- Biodegradation : BOD 77 %

3) ALKANES, C14-17, CHLORO

- Bioaccumulation : BCF 1087
- Biodegradation : No data available

4) Substance1

- Bioaccumulation : No data available
- Biodegradation : No data available

5) Substance2

- Bioaccumulation : No data available
- Biodegradation : No data available

6) Substance3

- Bioaccumulation : No data available
- Biodegradation : No data available

7) Substance4

- Bioaccumulation : No data available
- Biodegradation : No data available

8) Substance5

- Bioaccumulation : BCF 646
- Biodegradation : No data available

4. Mobility in soil

- 1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC
 - No data available
- 2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC
 - No data available
- 3) ALKANES, C14–17, CHLORO
 - No data available
- 4) Substance1
 - No data available
- 5) Substance2
 - No data available
- 6) Substance3
 - No data available
- 7) Substance4
 - No data available
- 8) Substance5
 - Koc 14750

5. Other adverse effects

- 1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC
 - No data available
- 2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC
 - No data available
- 3) ALKANES, C14–17, CHLORO
 - No data available
- 4) Substance1
 - No data available
- 5) Substance2
 - No data available
- 6) Substance3
 - No data available
- 7) Substance4
 - No data available
- 8) Substance5
 - No data available

13. DISPOSAL CONSIDERATIONS

1. Disposal methods

- Every commercial waste producer shall either treat wastes generated from his/her place of business by him/herself or commission the treatment of such wastes to a person who has license for a waste treatment business under Article 26(3), a person who recycles of such wastes under Article 44(2), a person who has installed and operates a waste disposal facility under Article 4 or 5, a person who has completed the registration of a business of discharging wastes into the sea under Article 18 of the Marine Environment Management Act.
2. Precautions (including disposal of contaminated container of package.)
- Dispose of contents/container to ...
 - Do not allow spill material to enter sewers, storm water drains, soil, etc.
 - Empty containers may explode and residues can be ignited when pressured, cut, weld, heated.
 - Empty containers may rupture when pressured.
 - Empty containers recycled under environmental laws.
 - Wear an appropriate Personal protection. (See Exposure Controls/Personal Protection section.)

14. TRANSPORT INFORMATION

1. UN No : Not Classified
2. Proper shipping name : Not Classified
3. Class or division : Not Classified
4. Packing group : Not Classified
5. Marine pollutant : Not Classified
6. Special safety response for transportation or transportation measure :
 - Emergency measures in case of fire : Not Classified
 - Emergency measures in the effluent : Not Classified

15. REGULATORY INFORMATION

1. Occupational safety and health act
 - 1) **DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC**
 - Not classified
 - 2) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**
 - Not classified
 - 3) **ALKANES, C14–17, CHLORO**
 - Not classified
 - 4) **Substance1**
 - Not classified
 - 5) **Substance2**

– Not classified

6) **Substance3**

– Not classified

7) **Substance4**

– Not classified

8) **Substance5**

– Threshold Limit Values (TLVs) chemicals

2. Toxic chemical control act

1) **DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC**

– Existing Chemical Substance

2) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**

– Existing Chemical Substance

3) **ALKANES, C14–17, CHLORO**

– Existing Chemical Substance

4) **Substance1**

– Existing Chemical Substance

5) **Substance2**

– Existing Chemical Substance

6) **Substance3**

– Existing Chemical Substance

7) **Substance4**

– Pollutant Release and Transfer Registers, Existing Chemical Substance

8) **Substance5**

– Existing Chemical Substance, Pollutant Release and Transfer Registers

3. Safety Control of hazardous substances act in Korea

Class 4 Third Petroleum liquids

4. Wastes Control Act in Korea

06–01–02, Grinding oil, coolant

5. Other regulations in Korea and overseas regulations

1) DISTILLATES, PETROLEUM, HYDROTREATED LIGHT PARAFFINIC

- Other regulation (Domestic) : Not classified
- National regulations :
 - EU Classification (CLASSIFICATION) : Carc.Cat.2; R45
 - EU Classification (Risk Phrases) : R45
 - EU Classification (Safety Phrases) : S:53-45

2) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- Other regulation (Domestic) : Not classified
- National regulations :
 - EU Classification (CLASSIFICATION) : Carc.Cat.2; R45
 - EU Classification (Risk Phrases) : R45
 - EU Classification (Safety Phrases) : S:53-45

3) ALKANES, C14-17, CHLORO

- Other regulation (Domestic) : Not classified
- National regulations :
 - EU Classification (CLASSIFICATION) : N; R50-53 R64 R66
 - EU Classification (Risk Phrases) : R50-53, R64, R66
 - EU Classification (Safety Phrases) : S:(2)-24-60-61

4) Substance1

- Other regulation (Domestic) : Not classified
- National regulations : Not classified

5) Substance2

- Other regulation (Domestic) : Not classified
- National regulations : Not classified

6) Substance3

- Other regulation (Domestic) : Not classified
- National regulations : Not classified

7) Substance4

- Other regulation (Domestic) : Not classified
- National regulations : Not classified

8) Substance5

- Other regulation (Domestic) : Not classified
- National regulations : Not classified

16. OTHER INFORMATION

1. Reference

- ACGIH
- Compiled under the Supervision of Chemical Products Safety Division, Basic, Industries Bureau MITI, Ed. by CITI, October 1992. Published by Japan Chemical Industry Ecology-Toxicology & Information Center
- ECOTOX
- EU CLP

- IARC
- IUCLID
- J Allergy Clin Immunol. 1990 Oct; 86 (4 Pt 1): 570–575.
- J Appl Toxicol, Vol 11(4), pp 297–302
- Journal of the American College of Toxicology, vol. 15 (suppl.)
- National Cancer Institute CARCINOGENESIS Technical Report Series No. 150 NCI-CG-TR-150 U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
- NITE
- OECD SIDS
- Other company data
- Publication
- QSAR
- Review article or handbook
- Study report
- Toxicol Lett. 1993 Mar; 66(3): 295–304.
- U.S. EPA

2. Prepare date : 2018-01-29

3. Revised date

4. Other

fill out based on the standard of the Ministry of Employment and Laborabout data, GHS, MSDS.