

Material Safety Data Sheet(MSDS)

This Material Safety Data Sheet(MSDS) has been provided


1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1. Product Name : S-OIL GREASE EP 3
2. Advisable use and Restriction
 - Advisable use : Lubricant grease
 - Restriction :
 - Do not mix the product with any other non-regulated products
3. Manufacturer/Supplier information
 - Manufacturer : KOREA HOUGHTON CORPORATION 20-31, Seobunam-ro 151beon-gil, Seonjang-myeon, Asan-si, Chungnam-do, S.KOREA (+82-2-3284-3353)
 - Supplier : S-OIL CORPORATION CO.,LTD, 192, Baekbeom-ro, Mapo-gu, Seoul 04196, Korea

S.KOREA

 - Information service or emergency number : +82-2-3284-3353
 - Dept. responsible for information/contact number : KOREA HOUGHTON CORPORATION R&D CENTER Technology & Management Team YOUNG UK, KWON (+82-10-2025-8059)

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
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.
 - 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.

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

– Response

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).

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.

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 HEAVY PARAFFINIC	1	1	0
2. Substance1	1	0	0
3. Substance2	1	1	0
4. Substance3	1	1	0
5. Substance4	3	0	0
6. Substance5	1	1	0
7. Substance6	1	0	0
8. Substance7	1	0	0

3. INGREDIENT INFORMATION

Components	Common name	CAS No.	PCT(W%)
1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC	64742-54-7	60.0~70.0
2) Substance1	–	–	10.0~20.0
3) Substance2	–	–	10.0~15.0
4) Substance3	–	–	1.0~2.0
5) Substance4	–	–	1.0~2.0

6) Substance5	-	-	0.1~1.0
7) Substance6	-	-	0.1~1.0
8) Substance7	-	-	0.01~1.0

4. FIRST AID MEASURES

1. Following eye contact

- Get medical aid immediately.
- 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 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.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation occurs: Get medical advice/ attention.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Launder contaminated clothing and shoes before re-use.
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medial assistance.
- Take off contaminated clothing and wash before reuse.

3. Following inhalation

- Administer oxygen if breathing is difficult.
- 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 medial assistance.

4. Following ingestion

- 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

artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

- 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

- Use dry sand or earth to smother fire., Water spray., CO₂., Dry chemical., Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

Unsuitable extinguishing media

- Direct water.

Large fire

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

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 be 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

- 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.
- 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 HEAVY PARAFFINIC

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

2) Substance1

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

3) Substance2

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

4) Substance3

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

5) Substance4

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

6) Substance5

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

7) Substance6

- Other regulation (Domestic) : Not established
- ACGIH : Not established
- Biological standard : Not established

8) Substance7

- Other regulation (Domestic) : Not established
- 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.

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 : Dark Brown
2. Odour : Oil
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 : Not applicable (but, base oil flash point : 240°C(C.O.C))
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 : 0.87 ± 0.05 (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 : NLGI No.3
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, 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
 - Ignition source(heat, spark, flame, etc.).
3. Incompatible materials
 - Combustibles, reducing material.
 - 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, corrosive and/or toxic gas.

11. TOXICOLOGICAL INFORMATION

1. Exposure route information

- Following eye contact : No data available
- Following ingestion : No data available
- Following inhalation : No data available
- Following skin contact : No data available

2. Health hazard information

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

1) 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

2) Substance1

- ACUTE TOXICITY
 - Oral : Not classified / LD50 4100 mg/kg Rat

- Dermal : Not classified / LD50 > 3000 mg/kg Rat
- Inhalation-Gases : No data available
- Inhalation-Vapours : Not classified / LC50 > 1.71 mg/L Rat
- 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 : 3
 - OSHA : Not applicable
 - ACGIH : Not applicable
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : Not classified / Negative Salmonella typhimurium
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : Not classified / No treatment-related deaths or toxic signs were reported. Rabbit
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / No abnormal reactions or deaths occurred during the study in rats. Rat
- ASPIRATION HAZARD : No data available

3) 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 : 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
- GERM CELL MUTAGENICITY : Not classified / Negative Chinese hamster Ovary
- REPRODUCTIVE TOXICITY : No data available
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : Not classified / No signs of toxicity observed Rat
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / No significant adverse effects of the test substance administration were noted in these studies. Rat
- ASPIRATION HAZARD : No data available

4) 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

5) Substance4

- ACUTE TOXICITY
 - Oral : Category 3 / LD50 210 mg/kg Rat
- ACUTE TOXICITY

- Dermal : No data available
- Inhalation-Gases : No data available
- Inhalation-Vapours : No data available
- Inhalation-Dust/mist : Not classified / LC50 0.96 mg/L Rat
- SKIN CORROSION/IRRITATION : Category 1 / Corrosive
- SERIOUS EYE DAMAGE/EYE IRRITATION : Category 1 / 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 : Not classified / Cause cardiac/circulatory system disorder, kidney disease, problem with metabolism if exposed.
- ASPIRATION HAZARD : No data available

6) Substance5

- 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

7) Substance6

- 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

8) Substance7

- ACUTE TOXICITY
 - Oral : Not classified / LD50 > 2600 mg/kg Rat
 - Dermal : Not classified / LD50 > 2000 mg/kg Rabbit
 - Inhalation-Gases : No data available

- Inhalation-Vapours : No data available
- Inhalation-Dust/mist : Not classified / LC50 > 2.538 mg/l Rat
- SKIN CORROSION/IRRITATION : Not classified / Slight or no irritation Rabbit
- SERIOUS EYE DAMAGE/EYE IRRITATION : Not classified / Not irritating Rabbit
- RESPIRATORY SENSITIZATION : No data available
- SKIN SENSITIZATION : Not classified / Non sensitising Guinea pig
- CARCINOGENICITY : Not classified
 - Notice of Employment and Labor : Not applicable
 - IARC : Not applicable
 - OSHA : Not applicable
 - ACGIH : A4
 - NTP : Not applicable
 - EU CLP : Not applicable
- GERM CELL MUTAGENICITY : Not classified / Negative Chinese hamster Ovary (CHO) cell
- REPRODUCTIVE TOXICITY : Category 1B / NOAEL 17.5 mg/kg Rat
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No data available
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not classified / NOAEL 100 mg/kg Rat
- ASPIRATION HAZARD : No data available

12. ECOLOGICAL INFORMATION

1. Aquatic toxicity

1) 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

2) Substance1

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

3) Substance2

- Fish : No data available
- Crustacea : EC50 > 100 mg/L Aquatic invertebrates
- Aquatic algae : EC50 > 100 mg/L Aquatic algae

4) Substance3

- Fish : No data available

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

5) Substance4

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

6) Substance5

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

7) Substance6

- Fish : LC50 > 5600 mg/L Fish
- Crustacea : No data available
- Aquatic algae : No data available

8) Substance7

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

2. Persistence and degradation

1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

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

2) Substance1

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

3) Substance2

- Degradation : BOD 83 %
- n-octanol water partition coefficient : log Pow 5.7

4) Substance3

- Degradation : No data available
- n-octanol water partition coefficient : log Kow 12.46

5) Substance4

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

6) Substance5

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

7) Substance6

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

8) Substance7

- Degradation : No data available
- n-octanol water partition coefficient : log Kow -1.09

3. Bioaccumulative potential

1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

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

2) Substance1

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

3) Substance2

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

4) Substance3

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

5) Substance4

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

6) Substance5

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

7) Substance6

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

8) Substance7

- Bioaccumulation : BCF 0 Fish

○ Biodegradation : No data available

4. Mobility in soil

- 1) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**
 - No data available
- 2) **Substance1**
 - No data available
- 3) **Substance2**
 - Koc 902.5 L/kg
- 4) **Substance3**
 - No data available
- 5) **Substance4**
 - No data available
- 6) **Substance5**
 - No data available
- 7) **Substance6**
 - No data available
- 8) **Substance7**
 - Koc \geq 62

5. Other adverse effects

- 1) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**
 - No data available
- 2) **Substance1**
 - No data available
- 3) **Substance2**
 - No data available
- 4) **Substance3**
 - No data available
- 5) **Substance4**
 - No data available
- 6) **Substance5**
 - No data available
- 7) **Substance6**
 - No data available
- 8) **Substance7**
 - 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.

- 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

7. AIR(IATA) : Not Regulated for Air Transport

15. REGULATORY INFORMATION

1. Occupational safety and health act

1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC

- Not classified

2) Substance1

- Not classified

3) Substance2

- Not classified

4) Substance3

- Not classified

- 5) **Substance4**
 - Not classified
- 6) **Substance5**
 - Not classified
- 7) **Substance6**
 - Not classified
- 8) **Substance7**
 - Not classified

2. Toxic chemical control act

- 1) **DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC**
 - Existing Chemical Substance
- 2) **Substance1**
 - Existing Chemical Substance
- 3) **Substance2**
 - Existing Chemical Substance
- 4) **Substance3**
 - Existing Chemical Substance
- 5) **Substance4**
 - Existing Chemical Substance
- 6) **Substance5**
 - Pollutant Release and Transfer Registers, Existing Chemical Substance
- 7) **Substance6**
 - Existing Chemical Substance
- 8) **Substance7**
 - Pollutant Release and Transfer Registers, Existing Chemical Substance

3. Safety Control of hazardous substances act in Korea

Not classified

4. Wastes Control Act in Korea

06-01-06, Other

5. Other regulations in Korea and overseas regulations

1) 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

2) Substance1

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

3) Substance2

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

4) Substance3

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

5) Substance4

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

6) Substance5

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

7) Substance6

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

8) Substance7

- Other regulation (Domestic) : Not classified
- National regulations :
 - EU Classification (CLASSIFICATION) : Repr.Cat.2; R60-61
 - EU Classification (Risk Phrases) : R60-61
 - EU Classification (Safety Phrases) : S:53-45

16. OTHER INFORMATION

1. Reference

- ACGIH
- CCR
- CCRIS
- ECOTOX
- EnviChem
- EPISUITE

- EU CLP
- EURAR
- HSDB
- IARC
- Int. J. of Toxicol., 18 (Suppl. 1): 1–10
- IPCS
- IUCLID
- J Appl Toxicol, Vol 11(4), pp 297–302
- J. Am. Coll. Tox. 6(3):321– 401
- NITE
- Publication
- Secondary source
- Study report
- Toxicology and Applied Pharmacology 23: 351 – 364.
- US EPA. [2009]. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.00. United States Environmental Protection Agency, Washington, DC, USA.

2. Prepare date : 2014–06–30

3. Revised date

4. Other

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