

# Material Safety Data Sheet(MSDS)

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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1. Product Name : S-OIL GRASE MP 3

2. Advisable use and Restriction

- Advisable use :grease
- Restriction :Please avoid to mix with different oil

3. Manufacturer/Supplier information

- Manufacturer : KOREA HOUGHTON CO., LTD. 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 CO., LTD. YOUNG UK, KWON (+82-10-2025-8059)

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## 2. HAZARD IDENTIFICATION

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1. Hazard classification

- ACUTE TOXICITY(Inhalation:Dust/mist) Category 4

2. Allocation label elements

- Symbol



- Signal word : Warning

- Hazard statements :

H332 Harmful if inhaled.

- Precautionary statements

- Prevention

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

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

- Response

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 you feel unwell.

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 ability | 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  | 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  | -   | -          | 5.0~15.0  |
| 4) Substance3  | -   | -          | 5.0~10.0  |
| 5) Substance4  | -   | -          | 0.1~1.0   |

### 4. FIRST AID MEASURES

- 1) Following eye contact
  - Get medical aid immediately.
  - In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
  
- 2) Following skin contact
  - Call a POISON CENTER or doctor/physician you feel unwell.
  - For minor skin contact, avoid spreading material on unaffected skin.
  - Get medical aid immediately.
  - 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.
  
- 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 INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
- Keep victim warm and quiet.
- Move victim to fresh air.
- Seek immediate medical 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 proper respiratory medical device.
- Get medical aid immediately.
- If unconscious but breathing, never give anything by mouth.

#### 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.

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## 5. FIRE FIGHTING MEASURES

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#### 1) Suitable (and unsuitable) extinguishing media

- Use dry sand or earth to smother fire.
- Large fire: Water spray/fog, regular foam (Suitable extinguishing media).
- Large fire: Foam (Suitable extinguishing media).
- Small fire: CO2 (Suitable extinguishing media).
- Direct water (Unsuitable extinguishing media).
- Large fire: Dry chemical (Suitable extinguishing media).
- Small fire: Dry chemical (Suitable extinguishing media).
- Large fire: Excess water (Suitable extinguishing media).
- Small fire: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO2 (Suitable extinguishing media).
- Large fire: Water spray/fog (Suitable extinguishing media).
- Small fire: Water spray (Suitable extinguishing media).
- Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
- High-pressure water (Unsuitable extinguishing media).
- Large fire: CO2 (Suitable extinguishing media).
- Large fire: Alcohol-resistant foam (Suitable extinguishing media).

## 2. Special hazards arising from the substance

- Specific hazards arising from the chemical(e.g. nature of any hazardous combustion products)
  - Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Special protective equipment and precautions for fire-fighters :
  - Some may burn but none ignite readily.
  - Fire may produce irritating and/or toxic gases.
  - Containers may explode when heated.

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## 6. ACCIDENTAL RELEASE MEASURES

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### 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.

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## 7. HANDLING AND STORAGE

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1) Precautions for safe handling

– No reference

2) Conditions for safe storage (including any incompatibilities)

– No reference

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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1. Exposure exposure limits, Biological exposure standard :

※ No exposure limits and biological exposure data of the product. thus data was described by the product component.

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

Other regulation (Domestic) : No reference

ACGIH : No reference

biologische standard : No reference

**2) Substance1**

Other regulation (Domestic) : No reference

ACGIH : No reference

biologische standard : No reference

**3) Substance2**

Other regulation (Domestic) : No reference

ACGIH : No reference

biologische standard : No reference

**4) Substance3**

Other regulation (Domestic) : No reference

ACGIH : No reference

biologische standard : No reference

**5) Substance4**

Other regulation (Domestic) : No reference

ACGIH : No reference

biologische standard : No reference

2. Appropriate engineering controls

– 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
  - No reference
- Eye protection
  - Provide emergency showers and eyewash.
  - Wear suitable protective goggles and face shields.
- Hand protection
  - Wear insulated gloves.
  - Wear suitable protective gloves.
- Body protection
  - Wear suitable protective clothing.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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1. Appearances : brown
2. Odors : slight oil
3. Odor Threshold Values : No reference
4. pH Values : No reference
5. Melting Point : No reference
6. Boiling Point : No reference
7. Flash Points : Not applicable (but, base oil flash point : 243°C/(C.O.C.))
8. Evaporation Rates : No reference
9. Flammability (solid, gas) : No reference
10. Upper/lower flammability or explosive limits : No reference
11. Vapor Pressure : No reference
12. Water Solubilities : No reference
13. Vapor Densities : No reference
14. Specific Gravity :  $0.88 \pm 0.05(15/4^{\circ}\text{C})$
15. Coefficient of Octanol/Water Distribution (Kow) : No reference
16. Autoignition Temperatures : No reference
17. Decomposition temperature : No reference

18. Viscosity : NLGI 3

19. Molecular Weight : No reference

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## 10. STABILITY AND REACTIVITY

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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.
- Irritating, corrosive and/or toxic gas.

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## 11. TOXICOLOGICAL INFORMATION

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1) Exposure route information

- by respiratory organ : No reference
- by mouth : No reference
- by skin and contact : No reference
- by eye and contact : No reference

2. Health hazard information

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

### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

ACUTE TOXICITY

- Oral : Not applicable / LD50 > 5000 mg/kg Rat
- Dermal : Not applicable / LD50 > 2000 mg/kg Rabbit
- Inhalation-Gases : No reference
- Inhalation-Vapours : No reference
- Inhalation-Dust/mist : Category 4 / LC50 2.18 mg/L Rat

SKIN CORROSION/IRRITATION : Not applicable / Not irritating Rabbit

- SERIOUS EYE DAMAGE/EYE IRRITATION : Not applicable / Not irritating Rabbit
- RESPIRATORY SENSITIZATION : No reference
- SKIN SENSITIZATION : Not applicable / Not sensitising Guinea pig
- CARCINOGENICITY : Not applicable
  - Ministry of Employment and Labor : No reference
  - IARC : No reference
  - OSHA : No reference
  - ACGIH : No reference
  - NTP : No reference
  - EU CLP : No reference
- GERM CELL MUTAGENICITY : Not applicable / Negative CHO cell
- REPRODUCTIVE TOXICITY : Not applicable / Reproductive performance was not adversely affected at any dose level evaluated. Rat
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No reference
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not applicable / No systemic effects were observed. Rat
- ASPIRATION HAZARD : No reference

## 2) Substance1

- ACUTE TOXICITY
  - Oral : Not applicable / LD50 4100 mg/kg Rat
  - Dermal : Not applicable / LD50 > 3000 mg/kg Rat
  - Inhalation–Gases : No reference
  - Inhalation–Vapours : Not applicable / LC50 > 1.71 mg/L Rat
  - Inhalation–Dust/mist : No reference
- SKIN CORROSION/IRRITATION : Not applicable / Not irritating Rabbit
- SERIOUS EYE DAMAGE/EYE IRRITATION : Not applicable / Not irritating Rabbit
- RESPIRATORY SENSITIZATION : No reference
- SKIN SENSITIZATION : Not applicable / Not sensitising Guinea pig
- CARCINOGENICITY : Not applicable
  - Ministry of Employment and Labor : No reference
  - IARC : 3
  - OSHA : No reference
  - ACGIH : No reference
  - NTP : No reference
  - EU CLP : No reference
- GERM CELL MUTAGENICITY : Not applicable / Negative CHO cell
- REPRODUCTIVE TOXICITY : No reference



- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : Not applicable / No treatment-related deaths or toxic signs were reported. Rabbit
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not applicable / No abnormal reactions or deaths occurred during the study in rats. Rat
- ASPIRATION HAZARD : No reference

### 3) Substance2

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

### 4) Substance3

- ACUTE TOXICITY
  - Oral : Not applicable / LD50 5000 mg/kg Rat
  - Dermal : No reference / LD50 > 2000 mg/kg Rabbit
  - Inhalation–Gases : No reference
  - Inhalation–Vapours : No reference
  - Inhalation–Dust/mist : Category 4 / LC50 2.18 mg/L Rat
- SKIN CORROSION/IRRITATION : Not applicable / Not irritating Rabbit
- SERIOUS EYE DAMAGE/EYE IRRITATION : Not applicable / Not irritating Rabbit

- RESPIRATORY SENSITIZATION : No reference
- SKIN SENSITIZATION : Not applicable / Guinea pig
- CARCINOGENICITY : Not applicable
  - Ministry of Employment and Labor : No reference
  - IARC : No reference
  - OSHA : No reference
  - ACGIH : No reference
  - NTP : No reference
  - EU CLP : No reference
- GERM CELL MUTAGENICITY : No reference
- REPRODUCTIVE TOXICITY : No reference
- SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No reference
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : No reference
- ASPIRATION HAZARD : No reference

#### 5) Substance4

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

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## 12. ECOLOGICAL INFORMATION

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### 1. Aquatic toxicity

#### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

Fish, Crustacean, Acuatic algae : No reference

#### 2) Substance1

Fish, Crustacean, Acuatic algae : No reference

#### 3) Substance2

Fish, Crustacean, Acuatic algae : No reference

#### 4) Substance3

Fish, Crustacean, Acuatic algae : No reference

#### 5) Substance4

Fish, Crustacean, Acuatic algae : No reference

### 2. Persistence and degradation

#### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

n-octanol water partition coefficient : log Kow 6

#### 2) Substance1

n-octanol water partition coefficient :No reference

#### 3) Substance2

n-octanol water partition coefficient :No reference

#### 4) Substance3

n-octanol water partition coefficient :No reference

#### 5) Substance4

n-octanol water partition coefficient :No reference

### 3. Bioaccumulative potential

#### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

Bioaccumulation : No reference

#### 2) Substance1

Bioaccumulation : No reference

**3) Substance2**

○ Bioaccumulation : No reference

**4) Substance3**

○ Bioaccumulation : No reference

**5) Substance4**

○ Bioaccumulation : No reference

4. Mobility in soil

1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC  
(DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

– No reference

2) Substance1

– No reference

3) Substance2

– No reference

4) Substance3

– No reference

5) Substance4

– No reference

5. Other adverse effects

1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC  
(DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

– No reference

2) Substance1

– No reference

3) Substance2

– No reference

4) Substance3

– No reference

5) Substance4

– No reference

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## 13. DISPOSAL CONSIDERATIONS

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1) Disposal methods

– No reference

2) Precautions (including disposal of contaminated container of package)

– No reference

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## 14. TRANSPORT INFORMATION

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1. UN No. : No reference

2. Proper shipping name : No reference
3. Class or division : No reference
4. Packing group : No reference
5. Marine pollutant : No reference
6. Special safety response for transportation or transportation measure :
  - Classification to Fire : Not classified
  - Classification to oil spillage : Not classified
7. AIR (IATA) : Not Regulated for Air Transport

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## 15. REGULATORY INFORMATION

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### ㄱ. Occupational safety and health act

#### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)

- No reference

#### 2) Substance1

- No reference

#### 3) Substance2

- No reference

#### 4) Substance3

- No reference

#### 5) Substance4

- No reference

### ㄴ. Toxic chemical control act

#### 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (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

3. Safety Control gefährlicher Stoffe wirken in Korea  
Not classified

4. Abfälle Control Act in Korea  
06-01-06, Other

5. Sonstige Vorschriften in Korea und im Ausland Vorschriften

**1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC  
(DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)**

- Other regulation (Domestic) : No reference
- 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) : No reference
- National regulations : No reference

**3) Substance2**

- Other regulation (Domestic) : No reference
- National regulations : No reference

**4) Substance3**

- Other regulation (Domestic) : No reference
- National regulations :
  - EU Classification (CLASSIFICATION) : Carc.Cat.2; R45
  - EU Classification (Risk Phrases) : R45
  - EU Classification (Safety Phrases) : S:53-45

**5) Substance4**

- Other regulation (Domestic) : No reference
- National regulations : No reference

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## 16. OTHER INFORMATION

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1. Reference :

- CCR
- CCRIS
- ECOTOX
- EU CLP
- HSDB
- IARC
- IUCLID

- J Appl Toxicol, Vol 11(4), pp 297-302
- NITE
- Publication
- Study report
- publication
- study report

2. Prepare date : 2011-05-13

3. Revised date : 2th revised edition - 2012. 8.29  
3th revised edition - 2013. 6. 6

4. Other : following revised GHS