# Material Safety Data Sheet(MSDS)

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- 1. Product Name: S-OIL GREASE EP 00
- 2. Advisable use and Restriction
  - O Advisable use :grease
  - O Restriction: Please avoid to mix with different oil
- 3. Manufacturer/Supplier information
  - Manufacture: KOREA HOUGHTON CO., LTD. 20-31, Seobunam-ro 151beon-gil, Seonjang-myeon, Asan-si, Chungnam-do, S.KOREA(+82-2-3284-3353)
  - O 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
- O Dept. responsible for information/contact number : KOREA HOUGHTON CO., LTD. YOUNG UK, KWON (+82-10-2025-8059)

## 2. HAZARD IDENTIFICATION

- 1. Hazard classification
  - ACUTE TOXICITY(Inhalation: Dust/mist) Category 4
  - LONG-TERM AQUATIC HAZARD Category 4
- 2. Allocation label elements
  - Symbol



- O Signal word: Warning
- Hazard statements:

H332 Harmful if inhaled.

H413 May cause long lasting harmful effects to aquatic life.

- O Precautionary statements
  - Prevention

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

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

P273 Avoid release to the environment.

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.

- 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 abliity | Reactivity |
| 1.            | DISTILLATES, PETROLEUM,<br>HYDROTREATED HEAVY<br>PARAFFINIC | 1          | 1             | 0          |
| 2.            | Substance1  | 1          | 0             | 0          |
| 3.            | Substance2  | 1          | 1             | 0          |
| 4.            | Substance3  | 1          | 1             | 0          |
| 5.            | Substance4  | 1          | 1             | 0          |
| 6.            | Substance5  | 1          | 1             | 0          |
| 7.            | Substance6  | 1          | 0             | 0          |

## 3. INGREDIENT INFORMATION

|    | Components  | Common name   | CAS No.    | PCT(W%)   |
|----|---|---|------------|-----------|
| 1) | DISTILLATES, PETROLEUM,<br>HYDROTREATED HEAVY<br>PARAFFINIC | DISTILLATES, PETROLEUM,<br>HYDROTREATED HEAVY<br>PARAFFINIC | 64742-54-7 | 60.0~70.0 |
| 2) | Substance1  | -   | -          | 20.0~30.0 |
| 3) | Substance2  | -   | -          | 1.0~10.0  |
| 4) | Substance3  | -   | ı          | 1.0~5.0   |
| 5) | Substance4  | -   | -          | 1.0~2.0   |
| 6) | Substance5  | -   | _          | 0.1~1.0   |
| 7) | Substance6  | -   | _          | 0.01~1.0  |

# 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 to fresh air.
- Move victim to fresh air.
- Seek immediate medial assistance. .

#### 4) Following ingestion

- Call 911 or emergency medical service.
- 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.
- 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.

# 5. FIRE FIGHTING MEASURES

- 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).
- Small fire: Regular foam (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
  - O 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.
  - O 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.

## 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.
- 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.
- 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
  - No reference
- 2) Conditions for safe storage (including any incompatibilities)
  - No reference

## 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 by the product component.

| 1) D | ISTILLATES, | PETROLEUM, | HYDROTREATEL | HEAVY | PARAFFINIC |
|------|-------------|------------|--------------|-------|------------|
|------|-------------|------------|--------------|-------|------------|

Other regulation (Domestic): No referenceACGIH: No referencebiologische standard: No reference

#### 2) Substance1

- Other regulation (Domestic): No referenceACGIH: No reference
- O biologische standard: No reference

## 3) Substance2

- Other regulation (Domestic): No reference
- O ACGIH: No reference
- O biologische standard: No reference

#### 4) Substance3

Other regulation (Domestic): No reference

| ○ ACGIH: No reference  |
|--|
| O biologische standard : No reference  |
|  |
| 5) Substance4  |
| Other regulation (Domestic): No reference  |
| ○ ACGIH: No reference  |
| ○ biologische standard : No reference  |
| 6) Substance5  |
| Other regulation (Domestic): No reference  |
| ○ ACGIH: No reference  |
| ○ biologische standard : No reference  |
| 7) Substance6  |
| Other regulation (Domestic): No reference  |
| ○ ACGIH: No reference  |
| ○ biologische standard : No reference  |
| Appropriate engineering controls  - Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. |
| - If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.                       |
| Personal protection  |
| <ul> <li>Respiratory protection</li> </ul>   |
| - No reference   |
| ○ Eye protection   |
| - Provide emergency showers and eyewash.   |
| - Wear suitable protective goggles and face shields.   |
| O Hand protection  |
| - Wear insulated gloves.   |
| - Wear suitable protective gloves.   |
| O Body protection  |
| - Wear suitable protective clothing.   |
| HYSICAL AND CHEMICAL PROPERTIES  |

# 9. P

1. Appearances : dark brown

2. Odors: slight oil

2.

3.

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)

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:  $0.88 \pm 0.05(15/4^{\circ}C)$ 

15. Coefficient of Octanol/Water Distribution (Kow): No reference

16. Autoignition Temperatures: No reference

17. Decomposition temperature: No reference

18. Viscosity: NLGI No.00

19. Molecular Weight: No reference

## 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:
  - Heat.
  - Ignition source(heat, spark, flame).

- 3) Incompatible materials:
  - Combustibles, reducing material.
  - Irritating and/or toxic gas.
- 4) Hazardous decomposition products:
  - Corrosive/toxic fume.
  - Irritating, corrosive and/or toxic gas.

| 11. | <b>TOXICOLOGICAL</b> | INFORMATION |
|-----|----------------------|-------------|
|     |                      |             |

| 1. TOXICOLOGICAL INFORMATION  |
|---|
| 1) Exposure route information  O by respiratory organ: No reference O by mouth: No reference O by skin and contact: No reference O by eye and contact: No reference   |
| <ul> <li>2. Health hazard information</li> <li>** No data of the product. thus data was described by the product component.</li> <li>1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC</li> <li>(DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)</li> <li>ACUTE TOXICITY</li> </ul> |
| - 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  |
| <ul> <li>REPRODUCTIVE TOXICITY: Not applicable / Reproductive performance was not adversely<br/>affected at any dose level evaluated. Rat</li> </ul>  |
| ○ SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No reference   |
| O SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE : Not applicable / No systemic effects were observed. Rat  |
| ○ ASPIRATION HAZARD: No reference   |
|   |

- 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 Mouse O REPRODUCTIVE TOXICITY: Not applicable / Reproductive performance was not adversely affected at any dose level evaluated. Also there were no neonatal toxicity observed. Rat O SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE: Not applicable / No clinical signs of toxicity not observed. Rat O SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: Not applicable / Exposed 0, 50, 220 or 1000 mg/m3 for 4weeks to rat(Sprague-Dawley), no systemic effects were observed. ○ ASPIRATION HAZARD: N/A 4) Substance3 O ACUTE TOXICITY - Oral: No reference - Dermal: No reference - Inhalation-Gases: No reference - Inhalation-Vapours: No reference Inhalation-Dust/mist : No reference O SKIN CORROSION/IRRITATION: No reference O SERIOUS EYE DAMAGE/EYE IRRITATION: No reference ○ RESPIRATORY SENSITIZATION: No reference ○ SKIN SENSITIZATION: No reference O 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 O GERM CELL MUTAGENICITY: No reference O REPRODUCTIVE TOXICITY: No reference O SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE: No reference

O SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: No reference

O ASPIRATION HAZARD: No reference

#### 5) Substance4

ACUTE TOXICITY

- Oral: No reference

- Dermal: No reference

Inhalation-Gases: No referenceInhalation-Vapours: No reference

- Inhalation-Dust/mist: No reference

○ SKIN CORROSION/IRRITATION: No reference

O SERIOUS EYE DAMAGE/EYE IRRITATION: No reference

O RESPIRATORY SENSITIZATION: No reference

O 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

O SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No reference

O SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: No reference

○ ASPIRATION HAZARD : No reference

#### 6) Substance5

O ACUTE TOXICITY

- Oral: Not applicable / LD50 5000 mg/kg Rat

- Dermal: No reference

Inhalation-Gases: No referenceInhalation-Vapours: No referenceInhalation-Dust/mist: No reference

○ SKIN CORROSION/IRRITATION: No reference

O SERIOUS EYE DAMAGE/EYE IRRITATION: No reference

O 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
- $\bigcirc$  SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE : No reference
- O SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: No reference
- ASPIRATION HAZARD : No reference

- O ACUTE TOXICITY
  - Oral: No reference
  - Dermal: No reference
  - Inhalation-Gases: No reference
  - Inhalation-Vapours : No reference
  - Inhalation-Dust/mist: No reference
- O SKIN CORROSION/IRRITATION: No reference
- O SERIOUS EYE DAMAGE/EYE IRRITATION: No reference
- O 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
- O REPRODUCTIVE TOXICITY: No reference
- O SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE: No reference
- SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE: No reference
- ASPIRATION HAZARD : No reference

## 12. ECOLOGICAL INFORMATION

1. Aquatic toxicity

| 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)  O Fish, Crustacean, Acuatic algae: N/A  |
|---|
| 2) Substance1   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| 3) Substance2   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| 4) Substance3   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| 5) Substance4   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| 6) Substance5   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| 7) Substance6   |
| O Fish, Crustacean, Acuatic algae: No reference   |
| Persistence and degradation  1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC  (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)  On-octanol water partition coefficient: log Kow 6 |
| 2) Substance1   |
| <ul><li>n-octanol water partition coefficient :No reference</li></ul>   |
| 3) Substance2   |
| <ul><li>n-octanol water partition coefficient :No reference</li></ul>   |
| 4) Substance3   |
| <ul><li>n-octanol water partition coefficient :No reference</li></ul>   |
| 5) Substance4   |
| ○ n-octanol water partition coefficient: log Kow 12.46  |
| 6) Substance5   |
| O n-octanol water partition coefficient: No reference   |

2.

- O n-octanol water partition coefficient: No reference
- 3. Bioaccumulative potential
  - O 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
  - 6) Substance5
  - No reference
  - 7) Substance6
  - 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
  - 6) Substance5
  - No reference
  - 7) Substance6
  - No reference

## 13. DISPOSAL CONSIDERATIONS

- 1) Disposal methods
  - No reference

- 2) Precautions (including disposal of contaminated container of package)
  - Dispose of contents/container to ...

## 14. TRANSPORT INFORMATION

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:
  - O Classification to Fire: Not classified
  - O Classification to oil spillage: Not classified
- 7. AIR (IATA): Not Regulated for Air Transport

## 15. REGULATORY INFORMATION

- 가. 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
  - 6) Substance5
  - No reference
  - 7) Substance6
  - No reference
- 나. Toxic chemical control act
  - 1) DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC (DISTILLATES, PETROLEUM, HYDROTREATED HEAVY PARAFFINIC)
  - Existing Chemical Substance

- Existing Chemical Substance

#### 3) Substance2

- Existing Chemical Substance

#### 4) Substance3

- Existing Chemical Substance

#### 5) Substance4

- Existing Chemical Substance

## 6) Substance5

- Existing Chemical Substance, Pollutant Release and Transfer Registers

#### 7) Substance6

- 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
  - O 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
- O National regulations: No reference

#### 3) Substance2

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

Other regulation (Domestic): No reference

O National regulations: No reference

## 5) Substance4

Other regulation (Domestic): No reference

O National regulations: No reference

## 6) Substance5

Other regulation (Domestic): No reference

O National regulations: No reference

#### 7) Substance6

Other regulation (Domestic): No reference

O National regulations: No reference

# 16. OTHER INFORMATION

- 1. Reference:
  - CCR
  - CCRIS
  - ECOTOX
  - EPISUITE
  - 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: 3th revised edition - 2014. 8.23

4. Other: following revised GHS