

# Material Safety Data Sheet (MSDS)

<b>Product</b>	<b>Kixx Hydrosafety 46</b>
----------------	----------------------------

Team	Date of first preparation	Date of last revision	Revision Number
Finished Lubricants R&D Team	2015-02-16	2017-10-26	2

## 1. Chemical Product and Company Information

- 1) Product : Kixx Hydrosafety 46
- 2) Recommended use of the chemical and restrictions on use
  - Recommended use : Lubricants, Fire Resistant Hydraulic Oil
  - Restrictions on use : None
- 3) Manufacture/Supplier information
  - Manufacture : GS Caltex Corporation, 679 Yoksam-dong, Kangnam-gu, Seoul, Korea
  - Supply company : GS Caltex Corporation
  - Address : 679 Yoksam-dong, Kangnam-gu, Seoul, Korea
  - Information service or emergency call : 82-2-1899-5145
  - Department in charge : Finished Lubricants R&D Team

## 2. Hazards Identification

- 1) Classification of the substance or mixture
  - Skin Corrosion/Irritation; Category 2
  - Serious Eyes Damage/Eye Irritation; Category 2
- 2) GHS labels, including precautionary statements
  - Symbol : 
  - Signal word : Danger
  - Hazard statement
    - H315 Causes skin irritation
    - H319 Causes serious eye irritation
  - Precautionary statement
    - Prevention
      - P264 Wash ... thoroughly after handling.
      - P280 Wear protective gloves/protective clothing/eye protection/face protection.
    - Response
      - P302+P352 IF ON SKIN: Wash with plenty of water/...
      - P321 Specific treatment (see ... on this label).
      - P332+P313 If skin irritation occurs: Get medical advice/attention.
      - P362+P364 Take off contaminated clothing and wash it before reuse.
      - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if eye irritation persists: Get medical advice/attention.
      - P337+P313 If eye irritation persists: Get medical advice/attention.
    - Storage

- No precautionary phrases.  
 – Disposal  
 No precautionary phrases.

3) Other hazards which do not result in classification

Component	NFPA	Health	Fire	Reactivity
1. Distilled Water		0	1	0
2. Polyether Polyols		0	1	0
3. Diethylene Glycol		1	1	0
4. Capric Acid Synthetic		3	1	0
5. Additive mixture (S1)		2	2	0

### 3. Composition and Information on Ingredients

Component	Synonyms	CAS No.	Content(%)
1. Distilled Water	Oxidane	7732-18-5	30 ~ 40
2. Polyether Polyols	2-methyloxirane	9003-11-06	10 ~ 20
3. Diethylene Glycol	2-(2-hydroxyethoxy)ethanol	111-46-6	40 ~ 50
4. Capric Acid Synthetic	decanoic acid	334-48-5	< 1
5. Additive mixture (S1)	Not Applicable	Not Determined	< 1

### 4. First Aid Measures

- 1) Eye contact :
  - Wash eyes thoroughly with plenty of water for at least 20 minutes.
- 2) Skin contact :
  - Remove contaminated clothing and wash skin with plenty of soap and water.
  - Flush with plenty of water for 15 minutes.
  - Seek medical attention if ill effect or irritation develops.
- 3) Inhalation :
  - If overcome by exposure, remove person to fresh air immediately.
  - Give oxygen or artificial respiration as needed.
  - Obtain emergency medical attention. Prompt action is essential.
- 4) Ingestion :
  - Do not induce vomiting. Obtain emergency medical attention. Prompt action is essential.
- 5) Most important symptoms/effects, acute and delayed :
  - May cause slight eye and skin irritation. Not expected to be a sensitizer.
- 6) First-aid treatment and information on medical doctors :
  - Treat symptomatically.
  - Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

---

## 5. Fire Fighting Measures

---

- 1) Recommended(or prohibited) extinguishing media
  - Recommended extinguishing media :
    - Dry chemicals, CO2, water spray, fire fighting foam
  - Prohibited extinguishing media :
    - High pressure water shoot
  - Large fire :
    - fire fighting foam or water spray
- 2) Specific hazard from chemical material
  - Toxicant from combustion : Carbon oxides
  - Fire and Explosion Hazards: Slight fire risk
- 3) Extinguishment :

If it is not dangerous, remove containers from fire areas.  
Make hills for further treatment.  
avoid Inhalation of material oneself or combustion generation material  
Stand against the wind and avoid lower zone.

---

## 6. Accidental Release Measures

---

- 1) Necessary actions to protect human health :

If it is not dangerous, stop release safely, do so.
- 2) Necessary actions to protect the environment
  - May contaminate water supplies/pollute public waters. Evacuate/limit access.  
Equip responders with proper protection.  
Prevent flow to sewer/public waters. Stop release. Notify fire and environmental authorities.  
Restrict water use for cleanup.
- 3) Purification and removal methods
  - Small leak : Only authorized person can access to the hazardous and restricted areas.  
Collect spills with proper containers to treat them.  
Absorb spills with sand and other non-combustible materials.
  - Large leak : No data

---

## 7. Handling and Storage

---

- 1) Safety handling :

Avoid contact with skin. Use proper bonding and/or grounding procedures.  
Prevent small spills and leakage to avoid slip hazard.  
Material can accumulate static charges which may cause an electrical spark (ignition source).
- 2) Storage :

Storage in closed containers.

---

## 8. Exposure Control and Personal Protection

---

A.Exposure limits and biological exposure limits of chemical

- 1) Distilled Water
  - ACGIH : No data
  - NIOSH : No data

Biological exposure limits : No data

2) Polyether Polyols

ACGIH : No data

NIOSH : No data

Biological exposure limits : No data

3) Diethylene Glycol

ACGIH : No data

NIOSH : No data

Biological exposure limits : No data

4) Capric Acid Synthetic

ACGIH : No data

NIOSH : No data

Biological exposure limits : No data

5) Additive mixture (S1)

ACGIH : No data

NIOSH : No data

Biological exposure limits : No data

B. Engineering management :

Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume

C. Personal protection equipment :

Respiratory protection :

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate.

Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

Eyes protection :

Safety glasses or goggles are recommended for the eyes protection from dusts or mists.

Hands protection :

Use proper chemical resistant gloves.

Human body protection :

Use proper chemical resistant clothes.

---

## 9. Physical and Chemical Properties

---

1) Appearance : Clear, light red liquid

2) Odor : a slight specific smell

3) Odor threshold : No data

4) pH : 9.7 (10% aqueous solution)

5) Melting point/freezing point : < -20°C

6) Initial boiling point or boiling range : No data

7) Flash point : No measurable by water

- 8) Evaporation rate (BuAc=1) : No data
- 9) Flammability(solid, gas) : No data
- 10) Upper/lower flammability or explosive limits : No data
- 11) Vapor pressure : No data
- 12) Solubility : soluble in Water
- 13) Vapor density : No data
- 14) Relative density : 1.08 Kg/L @ 15°C
- 15) Partition coefficient: n-octano/water : No data
- 16) Auto-ignition temperature : No data
- 17) Decomposition temperature : No data
- 18) Viscosity : 46 cSt @ 40°C
- 19) Molecular weight : No data

---

## 10. Stability and Reactivity

---

- 1) Chemical stability :
  - Stable at room temperature and pressure.
- 2) Toxicant generation possibility during reaction :
  - Not polymerization
- 3) Prohibited conditions :
  - Avoid heat, sparks, open flames and other ignition sources
- 4) Prohibited materials :
  - An oxidizing agent
- 5) Toxicant during decomposition :
  - Carbon oxides

---

## 11. Toxicological Information

---

### A. Information on the likely routes of exposure

- Inhalation : May cause slight irritation
- Ingestion : May cause vomit, coughing, shortness of breath, dizziness.
- Skin contact : May cause slight skin irritation.
- Eye contact : May cause slight eye irritation.

### B. Delayed and immediate effects and chronic effects from short or long term exposure

- 1) Distilled Water

- Acute oral toxicity
  - Oral : LD50 > 90000 mg/bw Rat
  - Dermal : No information available
  - Inhalation : No information available
- Skin corrosion/irritation : No irritating (Rabbit)
- Serious eye damage/eye irritation : No irritating (Rabbit)
- Respiratory sensitization : Not determined (guinea pig)
- Skin sensitization : Not determined (guinea pig)
- Carcinogenicity : MOL, OSHA, IARC : No data
- Germ cell mutagenicity : Negative (Ames test)
- Reproductive toxicity : No data
- Specific target organ systemic toxicity(single exposure) : No data
- Specific target organ systemic toxicity(repeated exposure) : No data
- Aspiration hazard : No data

## 2) Polyether Polyols

- Acute oral toxicity
  - Oral : LD50 > 5000 mg/bw Rat
  - Dermal : No information available
  - Inhalation : No information available
- Skin corrosion/irritation : Expected to be slightly irritating (Rabbit)
- Serious eye damage/eye irritation : Expected to be slightly irritating (Rabbit)
- Respiratory sensitization : Not determined (guinea pig)
- Skin sensitization : Not determined (guinea pig)
- Carcinogenicity : MOL, OSHA, IARC : No data
- Germ cell mutagenicity : Negative (Ames test)
- Reproductive toxicity : No data
- Specific target organ systemic toxicity(single exposure) : Expected to be slightly irritating
- Specific target organ systemic toxicity(repeated exposure) : No data
- Aspiration hazard : No data

## 3) Diethylene Glycol

- Acute oral toxicity
  - Oral : LD50 > 12565 mg/bw Rat
  - Dermal : LD50 > 11890 mg/bw Rabbit
  - Inhalation : No information available
- Skin corrosion/irritation : No irritating (Rabbit)
- Serious eye damage/eye irritation : No irritating (Rabbit)
- Respiratory sensitization : Not determined (guinea pig)
- Skin sensitization : Not determined (guinea pig)
- Carcinogenicity : MOL, OSHA, IARC : No data
- Germ cell mutagenicity : Negative (Ames test)
- Reproductive toxicity : No data
- Specific target organ systemic toxicity(single exposure) : No data
- Specific target organ systemic toxicity(repeated exposure) : No data
- Aspiration hazard : No data

## 4) Capric Acid Synthetic

- Acute oral toxicity

- Oral : LD50 > 3320 mg/bw Rat
- Dermal : LD50 > 5000 mg/bw Rabbit
- Inhalation : No information available
- Skin corrosion/irritation : No irritating (Rabbit)
- Serious eye damage/eye irritation : No irritating (Rabbit)
- Respiratory sensitization : Not determined (guinea pig)
- Skin sensitization : Not determined (guinea pig)
- Carcinogenicity : MOL, OSHA, IARC : No data
- Germ cell mutagenicity : Negative (Ames test)
- Reproductive toxicity : No data
- Specific target organ systemic toxicity(single exposure) : No data
- Specific target organ systemic toxicity(repeated exposure) : No data
- Aspiration hazard : No data

5) Additive mixture (S1)

- Acute oral toxicity
  - Oral : No data
  - Dermal : No information available
  - Inhalation : LD50 > 535 mg/bw Rat
- Skin corrosion/irritation : No irritating (Rabbit)
- Serious eye damage/eye irritation : No irritating (Rabbit)
- Respiratory sensitization : Not determined (guinea pig)
- Skin sensitization : Not determined (guinea pig)
- Carcinogenicity : MOL, OSHA, IARC : No data
- Germ cell mutagenicity : Negative (Ames test)
- Reproductive toxicity : No data
- Specific target organ systemic toxicity(single exposure) : No data
- Specific target organ systemic toxicity(repeated exposure) : No data
- Aspiration hazard : No data

C. Numerical measures of toxicity(such as ATE) : No data

## 12. Ecological Information

A. Hazardous to the aquatic environment :

1) Distilled Water

- Fish : No data
- Crustacea : No data
- Algae : No data

2) Polyether Polyols

- Fish : No data
- Crustacea : No data
- Algae : No data

3) Diethylene Glycol

- Fish : LC50 32000 mg/l 96hr
- Crustacea : No data
- Algae : No data

4) Capric Acid Synthetic

- Fish : LC50 54 mg/l 96 hr Oryzias Latipes
- Crustacea : EC50 > 20 mg/l 48 hr Daphnia magna

○ Algea : EC50 12 mg/l 96 hr Selenastrum capricornutum

5) Additive mixture (S1)

○ Fish : No data

○ Crustacea : No data

○ Algea : No data

B. Persistence and degradability :

1) Distilled Water

- log Kow -1.38

2) Polyether Polyols

- No data

3) Diethylene Glycol

- No data

4) Capric Acid Synthetic

- log Kow 4.09

5) Additive mixture (S1)

- No data

C. Bioaccumulative potential

1) Distilled Water

- No data

2) Polyether Polyols

- No data

3) Diethylene Glycol

- 31 (%) 28 day (other bacteria: Abwasser, nicht adaptiert)

- BCF 100 3 (Leuciscus idus melanotus(Fish, fesh water), 0.05mg/l)

4) Capric Acid Synthetic

- 60.9 (%) 5 day

5) Additive mixture (S1)

- No data

D. Mobility in soil :

- No data

E. Other adverse effects :

- No data

---

## 13. Disposal Considerations

---

1) Disposal methods :

Use only licensed transporters and permitted facilities for waste disposal.

2) Disposal cautions :

Dispose according to the related regulations

---

## 14. Transport Information

---

This product is not regulated for carriage according to ADR/RID, ADN, IMDG, ICAO/IATA.

1) UN number : Not applicable

2) UN Proper Shipping Name : Not applicable

3) Transport hazard classes : Not applicable

4) Packing group, if applicable : Not applicable

5) Environmental hazards : Not applicable

6) Special precautions for user : Not applicable

---

## 15. Regulatory Information

---

### A. Industrial safety and health act (Korea)

Occupation environment measurement material, Special health examination material, Threshold

### B. Chemical control act (Korea)

- Distilled Water : No data
- Polyether Polyols : No data
- Diethylene Glycol : No data
- Capric Acid Synthetic : No data
- Additive mixture (S1) : No data

### C. Wastes control act (Korea)

- Distilled Water : No data
- Polyether Polyols : No data
- Diethylene Glycol : No data
- Capric Acid Synthetic : No data
- Additive mixture (S1) : No data

### D. Hazardous material safety act (Korea)

- Distilled Water : No data
- Polyether Polyols : No data
- Diethylene Glycol : No data
- Capric Acid Synthetic : No data
- Additive mixture (S1) : No data

### E. Other internal and foreign acts

#### 1) Distilled Water

##### EU classification

- Classification : Not determined
- Risk Phrases : Not determined
- Safety Phrases : Not determined

##### U.S. acts

- OSHA (29CFR1910.119) : Not determined
- CERCLA 103 (40CFR302.4) : Not determined
- EPCRA 302 (40CFR355.30) : Not determined
- EPCRA 304 (40CFR355.40) : Not determined
- EPCRA 313 (40CFR372.65) : Not determined

#### 2) Polyether Polyols

##### EU classification

- Classification : Not determined
- Risk Phrases : Not determined
- Safety Phrases : Not determined

##### U.S. acts

- OSHA (29CFR1910.119) : Not determined
- CERCLA 103 (40CFR302.4) : Not determined

- EPCRA 302 (40CFR355.30) : Not determined
- EPCRA 304 (40CFR355.40) : Not determined
- EPCRA 313 (40CFR372.65) : Not determined

### 3) Diethylene Glycol

- EU classification
  - Classification : Not determined
  - Risk Phrases : Not determined
  - Safety Phrases : Not determined
- U.S. acts
  - OSHA (29CFR1910.119) : Not determined
  - CERCLA 103 (40CFR302.4) : Not determined
  - EPCRA 302 (40CFR355.30) : Not determined
  - EPCRA 304 (40CFR355.40) : Not determined
  - EPCRA 313 (40CFR372.65) : Not determined

### 4) Capric Acid Synthetic

- EU classification
  - Classification : Not determined
  - Risk Phrases : Not determined
  - Safety Phrases : Not determined
- U.S. acts
  - OSHA (29CFR1910.119) : Not determined
  - CERCLA 103 (40CFR302.4) : Not determined
  - EPCRA 302 (40CFR355.30) : Not determined
  - EPCRA 304 (40CFR355.40) : Not determined
  - EPCRA 313 (40CFR372.65) : Not determined

### 5) Additive mixture (S1)

- EU classification
  - Classification : Not determined
  - Risk Phrases : Not determined
  - Safety Phrases : Not determined
- U.S. acts
  - OSHA (29CFR1910.119) : Not determined
  - CERCLA 103 (40CFR302.4) : Not determined
  - EPCRA 302 (40CFR355.30) : Not determined
  - EPCRA 304 (40CFR355.40) : Not determined
  - EPCRA 313 (40CFR372.65) : Not determined

---

## 16. Other Information

---

### 1) References

- Korea Occupational Safety & Health Agency
- GS Caltex R&D Center
  - MSDS of of raw material from supplier
- KOSHANET
- Occupation safety and health acts of Korea
- Globally Harmonized System of classification and labeling of chemicals (GHS), First revised edition, United Nations
- EINECS(European Inventory of Existing Commercial Chemical Substances)
- ACGIH(American Conference of Governmental Safety and Health)
- IUCLID Dataset

2) Date of preparation of the first version of the MSDS : 2015-02-16

3) Revised frequency and Date of preparation of the latest version of the MSDS : 2017-10-26 (2)

4) Others :

To the best of our knowledge, the information provided in this MSDS document is correct. Access to this information is being provided via the Internet so that it can be made available to as many potential users as possible. We do not assume any liability for consequences of the use of this information since it may be applied under conditions beyond our control or knowledge. Also, it is possible that additional data could be made available after this MSDS was issued.

Certain hazards are described herein, however these may not be the only hazards that exist. All materials may present unknown hazards and should be used with caution.

Customers are encouraged to review this information, follow precautions, and comply with all applicable laws and regulations regarding the use and disposal of this product.

For specific technical data or advice concerning this product as supplied in your country please contact your local sales representative.

The final determination of the suitability of any material is the sole responsibility of the user.