

## Safety Data Sheet

# Ethylene oxide in water

Version : V2.0.0.1

Report No. : BWQ9209-2016-MSDS-EP

Creation Date : 2026/01/07

Revision Date : -



\*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

## 1 Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

|                           |                          |
|---------------------------|--------------------------|
| Product Name              | Ethylene oxide in water  |
| Cat No.                   | BWQ9209-2016             |
| CAS No.                   | Not applicable           |
| EC No.                    | Not applicable           |
| Molecular Formula         | Not applicable           |
| REACH Registration Number | -                        |
| UFI                       | No information available |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

|                          |                              |
|--------------------------|------------------------------|
| Relevant identified uses | Please consult manufacturer. |
| Uses advised against     | Please consult manufacturer. |

### 1.3 Details of the supplier of the Safety Data Sheet

|                        |                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------|
| Name of the company    | Weiyel Inc                                                                                           |
| Address of the company | Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China |
| Post code              | 465350                                                                                               |
| Telephone number       | 010-58103678                                                                                         |
| Fax number             | 010-84840368                                                                                         |
| E-mail address         | info@weiyel.com                                                                                      |

### 1.4 Emergency telephone number

|                            |              |
|----------------------------|--------------|
| Emergency telephone number | 010-58103678 |
| Opening hours              | 24h          |

## 2 Hazards identification

### 2.1 CLP classification according to Regulation ( EC ) No. 1272/2008 with amendment 2023/707

|                        |             |
|------------------------|-------------|
| Flammable liquids      | Category 1  |
| Germ cell mutagenicity | Category 1B |
| Carcinogenicity        | Category 1B |

### 2.2 Label elements

|                   |                                                                                                                                                                     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazard pictograms |   |
| Signal word       | <b>Danger</b>                                                                                                                                                       |

### Hazard statements

|      |                                       |
|------|---------------------------------------|
| H224 | Extremely flammable liquid and vapour |
| H340 | May cause genetic defects             |
| H350 | May cause cancer                      |

### Precautionary statements

#### Prevention

|      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| P201 | Obtain special instructions before use.                                                        |
| P202 | Do not handle until all safety precautions have been read and understood.                      |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed.                                                                 |
| P240 | Ground and bond container and receiving equipment.                                             |
| P241 | Use explosion-proof [electrical/ventilating/lighting] equipment.                               |
| P242 | Use non-sparking tools.                                                                        |
| P243 | Take action to prevent static discharges.                                                      |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection.                     |

#### Response

|                |                                                                                                                                                                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P308+P313      | IF exposed or concerned: Get medical advice/attention.                                                                                                                                                                                                                                                                                     |
| P370+P378      | Small fire: dry chemical, CO <sub>2</sub> or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].                                                                                                                                                                                                                         |

#### Storage

|           |                                              |
|-----------|----------------------------------------------|
| P405      | Store locked up.                             |
| P403+P235 | Store in a well-ventilated place. Keep cool. |

#### Disposal

|      |                                                                                                     |
|------|-----------------------------------------------------------------------------------------------------|
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |
|------|-----------------------------------------------------------------------------------------------------|

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

| Component      | Results of PBT and vPvB assessment [according to (EC) No 1907/2006] |
|----------------|---------------------------------------------------------------------|
| Water          | Insufficient information, temporarily unable to evaluate            |
| Ethylene oxide | Not PBT/vPvB                                                        |

#### Results of endocrine disrupting properties assessment

| Component      | Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605] |
|----------------|------------------------------------------------------------------------------------------------------------|
| Water          | Insufficient information, temporarily unable to evaluate                                                   |
| Ethylene oxide | Insufficient information, temporarily unable to evaluate                                                   |

◆ Other

Not applicable.

### 3 Composition/information on ingredients

#### 3.1 Substance

Not applicable

#### 3.2 Mixture

| Component                                                                            | Weight % content(or range) | Classification according to Regulation ( EC ) No. 1272/2008 with amendment 2023/707 [CLP]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Specific Conc. Limits, M-factors                |
|--------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Water</b><br>CAS : 7732-18-5<br>EC : 231-791-2<br>Index No. : -                   | 99.9                       | Not Classified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -                                               |
| <b>Ethylene oxide</b><br>CAS : 75-21-8<br>EC : 200-849-9<br>Index No. : 603-023-00-X | 0.1                        | Flammable gases, Category 1A, Flammable Gas, H220; Gases under pressure, Liquefied gas, H280; Acute Toxicity - Oral, Category 3, H301; Skin corrosion/irritation, Category 1B, H314; Serious eye damage/irritation, Category 1, H318; Acute Toxicity - Inhalation, Category 3, H331; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335; Specific target organ toxicity - single exposure; narcotic effects, Category 3, H336; Germ cell mutagenicity, Category 1B, H340; Carcinogenicity, Category 1B, H350; Reproductive toxicity, Category 1B, H360; Specific target organ toxicity - repeated exposure, Category 1, H372 | H331:ATE=700 ppmV (Gases) H301:ATE=100 mg/kg bw |

### 4 First-aid measures

#### 4.1 Description of first aid measures

|                                   |                                                                                                                                                                                                                                             |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>             | Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.                                                                                                                                     |
| <b>Eye contact</b>                | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.                                                                                                                                |
| <b>Skin contact</b>               | Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable.                                                                         |
| <b>Ingestion</b>                  | Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.                                                                                                                               |
| <b>Inhalation</b>                 | Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately. |
| <b>Protecting of first-aiders</b> | Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.                                                                                              |

## 4.2 Most important symptoms/effects, acute and delayed

|   |                                                                                                                                        |
|---|----------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. |
|---|----------------------------------------------------------------------------------------------------------------------------------------|

## 4.3 Indication of any immediate medical attention and special treatment needed

|   |                          |
|---|--------------------------|
| 1 | Treat symptomatically.   |
| 2 | Symptoms may be delayed. |

## 5 Fire-fighting measures

### 5.1 Extinguishing media

|                                       |                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable extinguishing media</b>   | Small fire: dry chemical, CO <sub>2</sub> or alcohol-resistant foam; Large fire: alcohol-resistant foam; Fire involving tanks, rail tank cars or highway tanks: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. |
| <b>Unsuitable extinguishing media</b> | Use of water spray when fighting fire may be inefficient.                                                                                                                                                                                                                                                                                  |

### 5.2 Specific hazards arising from the substance or mixture

|   |                                                                                                                                         |
|---|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Will form explosive mixtures with air.                                                                                                  |
| 2 | Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration. |
| 3 | Vapours may travel to source of ignition and flash back.                                                                                |
| 4 | Liquid and vapour are flammable.                                                                                                        |
| 5 | Development of hazardous combustion gases or vapor possible in the event of fire.                                                       |
| 6 | May expansion or decompose explosively when heated or involved in fire.                                                                 |

### 5.3 Advice for firefighters

|   |                                                                                                                        |
|---|------------------------------------------------------------------------------------------------------------------------|
| 1 | As in any fire, wear self-contained breathing apparatus ( MSHA/NIOSH approved or equivalent) and full protective gear. |
| 2 | Fight fire from a safe distance, with adequate cover.                                                                  |
| 3 | Prevent fire extinguishing water from contaminating surface water or the ground water system.                          |

## 6 Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

|   |                                                                                                                                                            |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Avoid breathing vapours and contacting with skin and eye.                                                                                                  |
| 2 | Beware of vapours accumulating to form explosive concentrations.                                                                                           |
| 3 | Vapours can accumulate in low areas.                                                                                                                       |
| 4 | Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves. |
| 5 | Use personal protective equipment, do not breathe gas/mist/vapour/spray.                                                                                   |
| 6 | Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.                                        |
| 7 | Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.                                                                          |

### 6.2 Environmental precautions

|   |                                                       |
|---|-------------------------------------------------------|
| 1 | Prevent further leakage or spillage if safe to do so. |
| 2 | Discharge into the environment must be avoided.       |

### 6.3 Methods and materials for containment and cleaning up

|    |                                                                                                                                                                                                                                                            |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.                                                                                                                        |
| 2  | In case of small amount of spillage, use clean non sparking tools to collect absorption materials.                                                                                                                                                         |
| 3  | In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space. |
| 4  | Collect absorbent material using a clean, non-sparking tool.                                                                                                                                                                                               |
| 5  | Cover with anti-solvent foam to reduce evaporation.                                                                                                                                                                                                        |
| 6  | Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.                                                                                                                   |
| 7  | Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.                                                                                                                                                         |
| 8  | Cut off the source of the leak as much as possible.                                                                                                                                                                                                        |
| 9  | Keep leaks in a ventilated place.                                                                                                                                                                                                                          |
| 10 | Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.                                                                                                                                   |
| 11 | Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.                                                                                                                                                                       |
| 12 | Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.                                                                                                                                |
| 13 | Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.                                                                                                                                                                       |

### 6.4 Reference to other sections

|   |                                                                            |
|---|----------------------------------------------------------------------------|
| 1 | Personal Protective Equipment advice is contained in Section 8 of the SDS. |
| 2 | Disposal considerations advice is contained in Section 13 of the SDS.      |

## 7 Handling and storage

### 7.1 Precautions for safe handling

#### ◆ Protective measures

|   |                                                   |
|---|---------------------------------------------------|
| 1 | Handling is performed in a well ventilated place. |
| 2 | Wear suitable protective equipment.               |
| 3 | Avoid contact with skin and eyes.                 |

#### ◆ Measures to prevent fire

|   |                                                                                                           |
|---|-----------------------------------------------------------------------------------------------------------|
| 1 | Use only non-sparking tools.                                                                              |
| 2 | To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded. |
| 3 | Use explosion proof equipment.                                                                            |
| 4 | Keep away from heat/sparks/open flames/ hot surfaces.                                                     |

#### ◆ Measures to prevent aerosol and dust generation

|   |                 |
|---|-----------------|
| 1 | Not applicable. |
|---|-----------------|

#### ◆ Advice on general occupational hygiene

|   |                                                 |
|---|-------------------------------------------------|
| 1 | Wash hands and face after using the substances. |
| 2 | Replace the contaminated clothing immediately.  |

### 7.2 Conditions for safe storage, including any incompatibilities

|   |                                                           |
|---|-----------------------------------------------------------|
| 1 | Keep containers tightly closed.                           |
| 2 | Keep containers in a dry, cool and well-ventilated place. |

|   |                                                                  |
|---|------------------------------------------------------------------|
| 3 | Keep away from heat/sparks/open flames/hot surfaces.             |
| 4 | Store away from incompatible materials and foodstuff containers. |

7.3 Specific end use(s)

|   |                                                                                      |
|---|--------------------------------------------------------------------------------------|
| 1 | In addition to use mentioned in the Section 1.2, unforeseen other specific end uses. |
|---|--------------------------------------------------------------------------------------|

8 Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

| Component      | Country/Region                                              | Limit value - Eight hours |       | Limit value - Short term |       |
|----------------|-------------------------------------------------------------|---------------------------|-------|--------------------------|-------|
|                |                                                             | ppm                       | mg/m³ | ppm                      | mg/m³ |
| Ethylene oxide | Japan - JSOH(2024–2025)                                     | 1                         | 1.8   | -                        | -     |
|                | Permissible exposure standards for workers in the workplace | 1                         | 1.8   | 2                        | 3.6   |
|                | European Union                                              | 1                         | 1.8   | -                        | -     |
|                | France                                                      | 1                         | 1.8   | -                        | -     |
|                | Germany (AGS)                                               | 1                         | 2     | 2                        | 4     |
|                | Italy                                                       | 1                         | 1.8   | -                        | -     |

Biological limit values

| Component      | Standard   | Biological monitoring index                                            | Biological limits value | Sampling time | Remark |
|----------------|------------|------------------------------------------------------------------------|-------------------------|---------------|--------|
| Ethylene oxide | USA -ACGIH | N-(2-hydroxyethyl)-valine (HEV) hemoglobin adducts(Hemoglobin adducts) | 5000pmol/g              | Not critical  |        |
|                |            | S-(2-hydroxyethyl) mercapturic acid (HEMA)(Creatinine in urine)        | 5µg/g                   | End of shift  |        |

Monitoring methods

|   |                                                                                                                                                   |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. |
| 2 | GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.                                                       |

Derived No effect level (DNEL)

| Component      | Route of exposure | DNEL for Workers      |                          |                         |                            |
|----------------|-------------------|-----------------------|--------------------------|-------------------------|----------------------------|
|                |                   | Acute effects (local) | Acute effects (systemic) | Chronic effects (local) | Chronic effects (systemic) |
| Water          | Inhalation        | No data available     | No data available        | No data available       | No data available          |
|                | Oral              | No data available     | No data available        | No data available       | No data available          |
|                | Dermal            | No data available     | No data available        | No data available       | No data available          |
| Ethylene oxide | Inhalation        | No data available     | No data available        | No data available       | No data available          |
|                | Oral              | No data available     | No data available        | No data available       | No data available          |
|                | Dermal            | No data available     | No data available        | No data available       | No data available          |

◆ Predicted No Effect Concentration (PNEC)

| Component      | A                    | B                    | C                    | D                    | E                    | F                    | G                    | H                                |
|----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------------------|
| Ethylene oxide | No hazard identified | No hazard identified | No hazard identified | No hazard identified | No hazard identified | No hazard identified | No hazard identified | No potential for bioaccumulation |

**Note 1:**

A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).

**Note 2:**

The PNEC values of the remaining components not shown in the product are not available yet.

## 8.2 Exposure controls

### 8.2.1 Engineering controls

|   |                                                                                        |
|---|----------------------------------------------------------------------------------------|
| 1 | Ensure adequate ventilation, especially in confined areas.                             |
| 2 | Ensure that eyewash stations and safety showers are close to the workstation location. |
| 3 | Use explosion-proof electrical/ventilating/lighting/equipment.                         |
| 4 | Set up emergency exit and necessary risk-elimination area.                             |

### 8.2.2 Personal protection equipment

| General requirement      |      |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye protection           | Must wear appropriate safety goggles.                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hand protection          | Must wear anti static chemical protective gloves.                                                                                                                                                                                                                                                                                                                                                                                      |
| Respiratory protection   | Must wear appropriate personal respiratory protective equipment.                                                                                                                                                                                                                                                                                                                                                                       |
| Skin and body protection | Must wear anti static chemical protective clothing and anti static shoes.                                                                                                                                                                                                                                                                                                                                                              |

### 8.2.3 Environmental exposure controls

|                                 |                          |
|---------------------------------|--------------------------|
| Environmental exposure controls | No information available |
|---------------------------------|--------------------------|

## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                |                         |
|----------------|-------------------------|
| Physical state | Clear, colorless liquid |
|----------------|-------------------------|

|                                                    |                                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------|
| <b>Colour</b>                                      | Clear, colorless liquid                                                  |
| <b>Odor</b>                                        | No information available                                                 |
| <b>Odor threshold</b>                              | No information available                                                 |
| <b>pH</b>                                          | No information available                                                 |
| <b>Melting point/freezing point(°C)</b>            | -111 ( Ethylene oxide )                                                  |
| <b>Initial boiling point and boiling range(°C)</b> | 11 ( Ethylene oxide )                                                    |
| <b>Flash point(Closed cup,°C)</b>                  | -57 ( Ethylene oxide )                                                   |
| <b>Evaporation rate</b>                            | No information available                                                 |
| <b>Flammability</b>                                | No information available                                                 |
| <b>Upper/lower explosive limits[% (v/v)]</b>       | Upper limit : 100 ( Ethylene oxide ); Lower limit : 3 ( Ethylene oxide ) |
| <b>Vapor pressure</b>                              | 146kPa ( 20°C ,Ethylene oxide )                                          |
| <b>Vapor density(Air = 1)</b>                      | 1.5 ( Ethylene oxide )                                                   |
| <b>Relative density(Water=1)</b>                   | 0.9 ( Ethylene oxide )                                                   |
| <b>Solubility</b>                                  | Miscible with water ( Ethylene oxide )                                   |
| <b>n-octanol/water partition coefficient</b>       | -0.3 ( Ethylene oxide )                                                  |
| <b>Auto-ignition temperature(°C)</b>               | 429 ( Ethylene oxide )                                                   |
| <b>Decomposition temperature(°C)</b>               | > 571 ( Ethylene oxide )                                                 |
| <b>Kinematic viscosity</b>                         | No information available                                                 |
| <b>Explosive properties</b>                        | No information available                                                 |
| <b>Oxidizing properties</b>                        | No information available                                                 |
| <b>Particle characteristics</b>                    | Not applicable                                                           |

## 9.2 Other information

### 9.2.1 Information with regard to physical hazard classes

|                                                           |                          |
|-----------------------------------------------------------|--------------------------|
| <b>Information with regard to physical hazard classes</b> | No information available |
|-----------------------------------------------------------|--------------------------|

### 9.2.2 Other safety characteristics

|                                     |                          |
|-------------------------------------|--------------------------|
| <b>Other safety characteristics</b> | No information available |
|-------------------------------------|--------------------------|

## 10 Stability and reactivity

### Stability and reactivity

|                                                |                                                                                                                                                                                                                                               |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | Contact with incompatible substances can cause decomposition or other chemical reactions.                                                                                                                                                     |
| <b>10.2 Chemical stability</b>                 | Stable under proper operation and storage conditions.                                                                                                                                                                                         |
| <b>10.3 Possibility of hazardous reactions</b> | In contact with active metals (alkali metals, Na, Ca etc.) causes a reaction and release hydrogen. In contact with inorganic acids or magnesium perchlorate causes an explosion.                                                              |
| <b>10.4 Conditions to avoid</b>                | Incompatible materials, heat, flame and spark.                                                                                                                                                                                                |
| <b>10.5 Incompatible materials</b>             | Alkali, sodium, calcium, and other active metal, halogen, metal oxide, nonmetal oxide, acyl halide and metal phosphide. Inorganic acids, covalent halides, inorganic alkali, amines, metal alkoxides, metal oxides and magnesium perchlorate. |
| <b>10.6 Hazardous decomposition products</b>   | Under normal conditions of storage and use, hazardous decomposition products should not be produced.                                                                                                                                          |

## 11 Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

| Ethylene oxide in water       |                                                                  |
|-------------------------------|------------------------------------------------------------------|
| Skin corrosion/irritation     | Based on available data, the classification criteria are not met |
| Serious eye damage/irritation | Based on available data, the classification criteria are not met |
| Skin sensitization            | Based on available data, the classification criteria are not met |
| Respiratory sensitization     | Based on available data, the classification criteria are not met |
| Reproductive toxicity         | Based on available data, the classification criteria are not met |
| STOT-single exposure          | Based on available data, the classification criteria are not met |
| STOT-repeated exposure        | Based on available data, the classification criteria are not met |
| Aspiration hazard             | Based on available data, the classification criteria are not met |
| Germ cell mutagenicity        | May cause genetic defects(Category 1B)                           |

#### Acute toxicity

| Component      | LD <sub>50</sub> (oral) | LD <sub>50</sub> (dermal) | LC <sub>50</sub> (inhalation,4h) |
|----------------|-------------------------|---------------------------|----------------------------------|
| Ethylene oxide | 72mg/kg(Rat)            | No information available  | 800ppmV(Rat)                     |

#### Carcinogenicity

| Component      | List of carcinogens by the IARC Monographs | Report on Carcinogens by NTP |
|----------------|--------------------------------------------|------------------------------|
| Water          | Not Listed                                 | Not Listed                   |
| Ethylene oxide | Category 1(Remark 1)                       | Category K                   |

Remark 1: Overall evaluation upgraded to Group 1 based on mechanistic and other relevant data

### 11.2 Information on other hazards

#### 11.2.1 Endocrine disrupting properties

| Component      | Endocrine disrupting properties |
|----------------|---------------------------------|
| Water          | No information available        |
| Ethylene oxide | No information available        |

#### 11.2.2 Other Information

|                   |                  |
|-------------------|------------------|
| Other Information | See Section 11.1 |
|-------------------|------------------|

## 12 Ecological information

### 12.1 Toxicity

#### Acute aquatic toxicity

| Component      | Fish                                  | Crustaceans              | Algae or other aquatic plants |
|----------------|---------------------------------------|--------------------------|-------------------------------|
| Ethylene oxide | LC <sub>50</sub> : 84mg/L (96h)(Fish) | No information available | No information available      |

#### Chronic aquatic toxicity

|                          |                          |
|--------------------------|--------------------------|
| Chronic aquatic toxicity | No information available |
|--------------------------|--------------------------|

## 12.2 Persistence and degradability

| Component      | Persistence (water/soil)    | Persistence (air)             |
|----------------|-----------------------------|-------------------------------|
| Ethylene oxide | Low(Half-life = 11.88 days) | High(Half-life = 381.96 days) |

## 12.3 Bioaccumulative potential

| Component      | Bioaccumulative potential | Comments |
|----------------|---------------------------|----------|
| Ethylene oxide | Low                       | BCF=35   |

## 12.4 Mobility in soil

| Component      | log Koc | Remark |
|----------------|---------|--------|
| Ethylene oxide | 0.51    | 20 °C  |

## 12.5 Results of PBT and vPvB assessment

| Component      | Results of PBT and vPvB assessment [according to (EC) No 1907/2006] |
|----------------|---------------------------------------------------------------------|
| Water          | Insufficient information, temporarily unable to evaluate            |
| Ethylene oxide | Not PBT/vPvB                                                        |

## 12.6 Endocrine disrupting properties

| Component      | Endocrine disrupting properties |
|----------------|---------------------------------|
| Water          | No information available        |
| Ethylene oxide | No information available        |

## 12.7 Other adverse effects

|                          |
|--------------------------|
| No information available |
|--------------------------|

# 13 Disposal considerations

## 13.1 Waste treatment methods

|                          |                                                                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste chemicals          | Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.                       |
| Contaminated packaging   | Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. |
| Disposal recommendations | Refer to section waste chemicals and contaminated packaging.                                                                                           |

# 14 Transport information

## Label and Mark

|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| Transporting Label |  |
|--------------------|-------------------------------------------------------------------------------------|

## IMDG-CODE

|                                                   |                          |
|---------------------------------------------------|--------------------------|
| <b>14.1 UN number</b>                             | 1993                     |
| <b>14.2 UN proper shipping name</b>               | FLAMMABLE LIQUID, N.O.S. |
| <b>14.3 Transport hazard class</b>                | 3                        |
| <b>14.4 Packing group</b>                         | I                        |
| <b>14.5 Environmental hazards<br/>(Yes or no)</b> | No                       |

**IATA-DGR**

|                                                   |                          |
|---------------------------------------------------|--------------------------|
| <b>14.1 UN number</b>                             | 1993                     |
| <b>14.2 UN proper shipping name</b>               | FLAMMABLE LIQUID, N.O.S. |
| <b>14.3 Transport hazard class</b>                | 3                        |
| <b>14.4 Packing group</b>                         | I                        |
| <b>14.5 Environmental hazards<br/>(Yes or no)</b> | No                       |

**UN-ADR**

|                                                   |                          |
|---------------------------------------------------|--------------------------|
| <b>14.1 UN number</b>                             | 1993                     |
| <b>14.2 UN proper shipping name</b>               | FLAMMABLE LIQUID, N.O.S. |
| <b>14.3 Transport hazard class</b>                | 3                        |
| <b>14.4 Packing group</b>                         | I                        |
| <b>14.5 Environmental hazards<br/>(Yes or no)</b> | No                       |

**Special precautions for user**

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Shipment of the goods vehicle exhaust pipe must be equipped with fire retardant devices, prohibit using mechanical equipment and tools of which easy to produce sparks. Transit should be anti-exposure, anti-rain, anti-high temperature.</p> <p>Transportation used tank (tank) cars should be grounded chain, tank can be installed to reduce the partition hole static electricity shocks. Strictly prohibited shipping or transportation with oxidants, acids, food and food additives etc. When bulk transport, Prohibit the use of cement or wooden boats. Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Maritime transport in bulk according to IMO instruments**

- ◆ Transport in bulk according to Annex II of MARPOL and the IBC code

|  |               |
|--|---------------|
|  | Not Available |
|--|---------------|

- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

|  |               |
|--|---------------|
|  | Not Available |
|--|---------------|

- ◆ Transport in bulk in accordance with the IGC Code

|  |               |
|--|---------------|
|  | Not Available |
|--|---------------|

**15 Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****International chemical inventory**

| Component      | A | B | C | D | E | F | G | H | I | J | K | L | M |
|----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water          | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Ethylene oxide | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

- [A] China Inventory of Existing Chemical Substances(IECSC)  
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)  
 [C] United States Toxic Substances Control Act Inventory(TSCA)  
 [D] Canadian Domestic Substances List(DSL)  
 [E] New Zealand Inventory of Chemicals(NZIoC)  
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)  
 [G] Korea Existing Chemicals Inventory(KECL)  
 [H] Australian. Inventory of Industrial Chemical (AIICS)  
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)  
 [J] Thailand Existing Chemicals Inventory(TECI)  
 [K] Mexico National Inventory of Chemical Substances (INSQ)  
 [L] Russia Inventory of Existing Substances(DRAFT)  
 [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

### List of Chemical Substances under International Conventions

| Component      | A | B | C |
|----------------|---|---|---|
| Water          | × | × | × |
| Ethylene oxide | × | × | ✓ |

- [A] The Montreal Protocol on Substances that Deplete the Ozone Layer  
 [B] Stockholm Convention on Persistent Organic Pollutants (POPs)  
 [C] Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

### European chemical inventory

| Component      | A | B | C | D | E | F | G | H | I |
|----------------|---|---|---|---|---|---|---|---|---|
| Water          | × | × | × | ✓ | × | × | × | × | × |
| Ethylene oxide | × | × | ✓ | ✓ | ✓ | ✓ | × | × | × |

- [A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation  
 [B] Substances requiring authorisation under EU REACH regulation  
 [C] Substances restricted under EU REACH  
 [D] Pre-registered substances under EU REACH  
 [E] Registered substances under EU REACH  
 [F] Substance Evaluation – CoRAP under EU REACH  
 [G] List of priority substances under EU water policy ( Directive 2455/2001/EC )  
 [H] Substances subject to POPs Regulation  
 [I] Substances proposed as POPs

Note:

- “✓” Indicates that the substance included in the regulations.  
 “×” No data or not included in the regulations.

### German water hazard class(WGK)

| Component      | WGK   | Remark |
|----------------|-------|--------|
| Ethylene oxide | WGK 3 |        |

- [WGK 1] slightly hazardous to water  
 [WGK 2] obviously hazardous to water  
 [WGK 3] highly hazardous to water  
 [nwg] non-hazardous to water

【awg】 hazardous to water in general

**German technical instructions on air quality control(TA LUFT)**

| Component      | TA LUFT                                                                                                                                                                                                        | Remark |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Ethylene oxide | Kapitel 5.2.7.1.1 Krebserzeugende Stoffe. Klasse II. Als Mindestanforderung dürfen die folgende Werte im Abgas. insgesamt nicht überschritten werden. Mass flow: 1,5 g/hr or Mass conc.: 0,5 mg/m <sup>3</sup> |        |

**German technical rules for hazardous substances(TRGS)**

| Component      | TRGS                                                                                                                                                                                  | Remark |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Water          | TRGS 500 TRGS 509 TRGS 510                                                                                                                                                            |        |
| Ethylene oxide | TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 407 TRGS 745 TRBS 3145 TRGS 746 TRBS 3146 TRGS 510 TRGS 410 TRGS 500 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 513 |        |

**15.2 Chemical safety assessment**

|  |                                                                                                |
|--|------------------------------------------------------------------------------------------------|
|  | No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier. |
|--|------------------------------------------------------------------------------------------------|

**16 Other information****Information on revision**

|                     |            |
|---------------------|------------|
| Creation Date       | 2026/01/07 |
| Revision Date       | -          |
| Reason for revision | -          |

**Reference**

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

**Abbreviations and acronyms**

|                  |                                   |           |                                                           |
|------------------|-----------------------------------|-----------|-----------------------------------------------------------|
| CAS              | Chemical Abstracts Service        | UN        | The United Nations                                        |
| PC-STEL          | Short term exposure limit         | OECD      | Organization for Economic Co-operation and Development    |
| PC-TWA           | Time Weighted Average             | IMDG-CODE | International Maritime Dangerous Goods CODE               |
| MAC              | Maximum Allowable Concentration   | IARC      | International Agency for Research on Cancer               |
| DNEL             | Derived No Effect Level           | ICAO      | International Civil Aviation Organization                 |
| PNEC             | Predicted No Effect Concentration | IATA      | International Air Transportation Association              |
| NOEC             | No Observed Effect Concentration  | ACGIH     | American Conference of Governmental Industrial Hygienists |
| LC <sub>50</sub> | Lethal Concentration 50%          | NFPA      | National Fire Protection Association                      |
| LD <sub>50</sub> | Lethal Dose 50%                   | NTP       | National Toxicology Program                               |

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|                  |                                      |      |                                                           |
|------------------|--------------------------------------|------|-----------------------------------------------------------|
| EC <sub>50</sub> | Effective Concentration 50%          | PBT  | Persistent, Bioaccumulative, Toxic                        |
| EC <sub>x</sub>  | Effective Concentration X%           | vPvB | very Persistent, very Bioaccumulative                     |
| P <sub>ow</sub>  | Partition coefficient Octanol: Water | CMR  | Carcinogens, mutagens or substances toxic to reproduction |
| BCF              | Bioconcentration factor              | RPE  | Respiratory Protective Equipment                          |
| ED               | Endocrine disruptor                  |      |                                                           |

## **Disclaimer**

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.