# SAFETY DATA SHEET

Hysol X

**In accordance with Industrial Safety and Health Act**

MSDS Approval Number AA00907-0000000049

## Section 1. Chemical product and company identification

**Product name** Hysol X

**Code** 450877-KR01

**SDS no.** 450877

**Supplier** BP Korea Ltd.
19F., 302, Teheran-ro, Gangnam-gu, Seoul, 06210
Republic of Korea

Tel: +82 -1577-1904

**EMERGENCY TELEPHONE NUMBER** Carechem: +65 3158 1074 (24/7)

**Relevant identified uses of the substance or mixture and uses advised against**

**Use of the substance/ mixture** Metalworking fluid - soluble.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

## Section 2. Hazards identification

**GHS Classification**

SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITISATION - Category 1
REPRODUCTIVE TOXICITY - Category 1B
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

**GHS label elements, including precautionary statements**

**Symbol**

**Signal word** Danger

**Hazard statements**

H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H360 - May damage fertility or the unborn child.

**Precautionary statements**

**Prevention**

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P261 - Avoid breathing vapour.
P264 - Wash hands thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.

## Section 2. Hazards identification

**Response**

P308 + P313 - IF exposed or concerned: Get medical attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 - If skin irritation or rash occurs: Get medical attention.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

**Storage**

P405 - Store locked up.

**Disposal**

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification**

Defatting to the skin.

## Section 3. Composition/information on ingredients

**Substance/mixture**

Mixture

Highly refined mineral oil, emulsifiers and additives.

**Hazardous ingredients**

| Ingredient name | Synonym | CAS number | % |
|---|---|---|---|
| Distillates (petroleum), hydrotreated heavy naphthenic | Baseoil - unspecified; Distillates, petroleum, hydrotreated heavy naphthenic; Hydrotreated heavy naphthenic distillate, solvent extract, petroleum; Mineral oil, petroleum distillates, hydrotreated heavy naphthenic; Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic; Distillates (petroleum), hydro-treated heavy naphthenic; Hydrotreated heavy naphthenic distillate solvent extract (petroleum); OILS, MINERAL, HEAVY NAPHTHENIC, HYDROTREATED; OILS, NAPHTHENIC, HYDROGENATED; SEVERELY SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES; HYDROTREATED LIGHT PETROLEUM DISTILLATE | 64742-52-5 | 38.5 |
| Monoethanolamine with polyethoxy oleyl ether phosphate | - | - | 5.23271 |
| Polysulphides, di-tert-dodecyl | Sulfides, tert-dodecyl; Di (tert-dodecyl)polysulfide; Di-tert-dodecyl polysulfides; DTPS; Di(tert-dodecyl) polysulphide; Di-tert-dodecyl polysulfide; Mixture of dialkyl (or alkenyl,C6-24)- | 68425-15-0 | 5 |

| | | | |
|---|---|---|---|
| | polysulfide (mono-octasulfide); Diteritary DO Dodecyl Polysulfide; di (alkyl C11-C13 Branched, C12 Rich), polysulfure S3-S5 rich | | |
| sulphonic acids, petroleum, sodium salts | Petroleum sulfonate, sodium salt; Sulfonated petroleum, sodium salt; Sulphonic acids, petroleum, sodium salts; sodium petroleum sulfonate; Petroleum sulfonic acid, sodium salt; Sulfonic acids, petroleum, sodium salt; Petroleum sulfonic acid, monosodium salt; Oil soluble petroleum sulfonates, sodium salts; Oil soluble petroleum sulfonate, sodium salt; Mineral oil sulfonic acids, sodium salts; Petroleum sulfonates, sodium salts | 68608-26-4 | 3.465 |
| N,N'-Methylenebismorpholine | N,N′-methylenedimorpholine; N,N′-methylenebismorpholine; Morpholine, 4,4'-methylenebis-; N,N-Methylenebismorpholine; Morpholine, 4,4'-methylenedi-; MBM; N,N'-Methylenedimorpholine; formaldehyde released from N,N′-Methylenebismorpholine; N,N'methylenebismorpholine; Bismorpholino methane; 4,4'-Methylenedimorpholine | 5625-90-1 | 3.22 |
| Alcohols, C16-18, ethoxylated propoxylated | (C16-18) Alkyl alcohol ethoxylate propoxylate; Alcohols, C16-18, ethoxylated propoxylated (5 - 15 EO units, < 6 PO units); Alcohols, C16-18-, ethoxylated propoxylated; C16-18-Alkyl alcohol ethoxylate propoxylate; Ethoxylated propoxylated alcohols(C16-18); Polyoxyalkylene (C2-4,8) monoalkyl(or alkenyl) (C1-24) ether (n1-150); Ethoxylated propoxylated alcohols (C=16-18); FATTY ALCOHOL, C16-18 PROPOXYLATED, ETHOXYLATED | 68002-96-0 | 2.3 |

| | | | |
|---|---|---|---|
| Monoethanolamine with alkyl ether carboxylic acid | - | - | 2.09348 |
| glycerol | 1,2,3-Propanetriol; glycerin; Glycerin (mist); Trihydroxypropane; Glycyl alcohol; Glycerin anhydrous; Glycerin mist; glycerol, crude; glycerine, crude; glycerine; E 422; glycerin; propane-1,2,3-triol | 56-81-5 | 1.994 |
| white mineral oil, petroleum | White mineral oil, petroleum; White spirits; Mineral oil; Paraffin oil; WHITE MINERAL OIL; Paraffinum liquidum; OILS, WHITE MINERAL, PETROLEUM; petroleum mineral oil | 8042-47-5 | 1.925 |
| Boric acid | Boric acid (H3BO3); Orthoboric acid; boric acid, other than natural boric acid of heading Nº 2528; boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight; product consisting of ammonium nitrate, magnesium nitrate, mixture of diammonium phosphate and ammonium sulphate and boric acid; E 284; boracic acid; orthoboric acid; borofax; TRIHYDROXYBORANE; BORON TRIHYDROXIDE; Boracic acid; trioxoboric acid; Trihydroxidoboron | 10043-35-3 | 1.35 |
| Monoethanolamine with citric acid | - | - | 0.97734 |
| 3-Iodo-2-propynyl butylcarbamate | 3-iodoprop-2-yn-1-yl butylcarbamate; Carbamic acid, N-butyl-, 3-iodo-2-propyn-1-yl ester; Carbamic acid, butyl-, 3-iodo-2-propynyl ester; IODOPROPYNYL BUTYLCARBAMATE; Iodocarb; 3-iodo-2-propynyl butylcarbamate; iodocarb; 3-Iodo-2-propynyl n-butylcarbamate; IPBC; N-Butylcarbamic acid, 3-Iodo-2-propyn-1-yl ester; 3-iodo-2-propynyl-n-butyl carbamate; Butylcarbamic acid 3-iodo-2-propynyl ester | 55406-53-6 | 0.4 |
| Monoethanolamine with Fatty acids, C16 – 18 and C18-unsatd. | - | - | 0.365 |

# Section 3. Composition/information on ingredients

### Non-hazardous ingredients

| Ingredient name | Synonym | CAS number | % |
|---|---|---|---|
| Trade secret. | Trade secret. | Trade secret. | 11.506 - 11.631 |
| Trade secret. | Trade secret. | Trade secret. | 10.892 |
| Trade secret. | Trade secret. | Trade secret. | 9.5 |
| Trade secret. | Trade secret. | Trade secret. | 0.67563 |
| Trade secret. | Trade secret. | Trade secret. | 0.31378 |
| Trade secret. | Trade secret. | Trade secret. | 0.1275 - 0.1425 |
| Trade secret. | Trade secret. | Trade secret. | 0.0875 - 0.1125 |

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

# Section 4. First aid measures

**Eye contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention immediately. Chemical burns must be treated promptly by a physician.

**Skin contact**

Get medical attention immediately. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Clean shoes thoroughly before reuse. In the event of any complaints or symptoms, avoid further exposure. Chemical burns must be treated promptly by a physician.

**Inhalation**

If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention immediately.

**Ingestion**

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Wash out mouth with water if person is conscious. Get medical attention immediately. Chemical burns must be treated promptly by a physician.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Specific treatments**

No specific treatment.

**Notes to physician**

Treatment should in general be symptomatic and directed to relieving any effects. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## Section 5. Firefighting measures

**Extinguishing media**

**Suitable**
In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

**Not suitable**
Do not use water jet.

**Specific hazards arising from the chemical**
In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**
Combustion products may include the following:
phosphorus oxides
metal oxide/oxides
carbon oxides (CO, $CO_2$) (carbon monoxide, carbon dioxide)
sulphur oxides (SO, $SO_2$, etc.)
nitrogen oxides (NO, $NO_2$ etc.)

**Special protective equipment for fire-fighters**
Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

**Special protective actions for fire-fighters**
No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

## Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

**Environmental precautions**
Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and material for containment and cleaning up**

**Small spill**
Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**
Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**
Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways. Avoid prolonged or repeated contact with skin. During metal working, solid particles from workpieces

## Section 7. Handling and storage

or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid and as a result may induce allergic skin reactions. Evaporation of water from soluble cutting fluids during use may lead to an increase in concentration which may result in the development of skin conditions due to irritation and defatting. It is important to monitor fluid strength on a regular basis with a refractometer and maintain it at the recommended concentration. Lubricants from other sources and other contaminants should be minimised. Swarf and other debris should be removed. To maintain optimum performance and minimise bacterial spoilage, machine tool coolant systems should be cleaned on a regular basis.

**Advice on general occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/ containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

**Not suitable**

Prolonged exposure to elevated temperature

## Section 8. Exposure controls/personal protection

**Control parameters**

| Ingredient name | Exposure limits |
|---|---|
| Distillates (petroleum), hydrotreated heavy naphthenic | **ACGIH TLV (United States). [Mineral Oil, pure, highly and severely refined]** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction |
| glycerol | **Ministry of Employment and Labor (Republic of Korea).** TWA: 10 mg/m³ 8 hours. Issued/Revised: 3/2011 Form: Mist |
| white mineral oil, petroleum | **ACGIH TLV (United States). [Mineral Oil, pure, highly and severely refined]** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction |
| Boric acid | **ACGIH TLV (United States). [Borate compounds, Inorganic]** STEL: 6 mg/m³ 15 minutes. Issued/Revised: 1/2005 Form: Inhalable fraction TWA: 2 mg/m³ 8 hours. Issued/Revised: 1/2005 Form: Inhalable fraction |

**Biological exposure indices**

No exposure indices known.

Other ingredients including trade secret: not applicable

**Recommended monitoring procedures**

Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls**

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

**Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Personal protective equipment**

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.
For protection against metal working fluids, respiratory protection that is classified as “resistant to oil” (class R) or oil proof (class P) should be selected where appropriate. Depending on the level of airborne contaminants, an air-purifying, half-mask respirator (with HEPA filter) including disposable (P- or R-series) (for oil mists less than 50mg/m3), or any powered, air-purifying respirator equipped with hood or helmet and HEPA filter (for oil mists less than 125 mg/m3).
Where organic vapours are a potential hazard during metalworking operations, a combination particulate and organic vapour filter may be necessary.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**Eye protection**

Do not get in eyes. Wear face shield. Chemical splash goggles.

**Hand protection**

Wear suitable gloves. Undiluted fluid: Wear chemical resistant gloves. Recommended: nitrile gloves.
Diluted fluid: Wear protective gloves if prolonged or repeated contact is likely. Recommended: nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**Skin protection**

Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when

## Section 8. Exposure controls/personal protection

cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**Appearance**

**Physical state** Liquid.

**Colour** Amber.

**Odour** Not available.

**Odour threshold** Not available.

**pH** 9.05 [Conc. (% w/w): 5%]

**Melting/freezing point** Not available.

**Boiling point, initial boiling point, and boiling range** Not available.

**Flash point** Open cup: >100°C (>212°F) [Estimated. Water content interferes with flash point determination.]

Unmeasurable Water content interferes with flash point determination.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

Not applicable. Based on - Physical state

**Lower and upper explosive (flammable) limits** Not available.

**Vapour pressure**

| Ingredient name | Vapour Pressure at 20˚C | | | Vapour pressure at 50˚C | | |
|---|---|---|---|---|---|---|
| | mm Hg | kPa | Method | mm Hg | kPa | Method |
| Distillates (petroleum), hydrotreated heavy naphthenic | <0.08 | <0.011 | ASTM D 5191 | | | |
| Water | 23.8 | 3.2 | | | | |
| Polysulphides, di-tert-dodecyl | 0.0000031 | 0.00000041 | OECD 104 | | | |
| glycerol | 0.000075 | 0.00001 | | 0 | 0 | |
| white mineral oil, petroleum | 0.08 | 0.011 | OECD 104 | | | |

**Solubility(ies)**

| Media | Result |
|---|---|
| water | Soluble |

**Vapour density** Not available.

**Relative density** Not available.

**Density** <1000 kg/m³ (<1 g/cm³) at 15°C

## Section 9. Physical and chemical properties

**Partition coefficient: n-octanol/water** Not applicable.

**Auto-ignition temperature**

| Ingredient name | °C | °F | Method |
|---|---|---|---|
| isopropyl oleate | 240 | 464 | |
| Polysulphides, di-tert-dodecyl | 240 | 464 | EU A.15 |
| glycerol | 370 | 698 | |
| white mineral oil, petroleum | 325 to 355 | 617 to 671 | ASTM E 659 |

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Molecular weight** Not applicable as it is a mixture

**Particle characteristics**

**Median particle size** Not applicable.

## Section 10. Stability and reactivity

**Chemical stability** The product is stable.

**Possibility of hazardous reactions** Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

**Conditions to avoid** No specific data.

**Incompatible materials** Reactive or incompatible with the following materials: oxidising materials. Slightly reactive or incompatible with the following materials: acids.

**Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

**Information on likely routes of exposure** Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

**Acute toxicity**

**Inhalation** May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Ingestion** May cause burns to mouth, throat and stomach.

**Skin contact** Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

**Eye contact** Causes serious eye damage.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Inhalation** No specific data.

**Ingestion** Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

**Skin** Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced foetal weight
increase in foetal deaths

skeletal malformations

**Eyes** Adverse symptoms may include the following:
pain
watering
redness

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

| Product/ingredient name | Test | Species | Result | Exposure | Remarks |
|---|---|---|---|---|---|
| N,N'-Methylenebismorpholine | LD50 Oral | Rat | 500 to 2000 mg/kg | - | - |
| Alcohols, C16-18, ethoxylated propoxylated | LD50 Oral | Rat | >5000 mg/kg | - | Based on studies with similar substances. |
| Boric acid | LD50 Dermal | Rabbit | >2000 mg/kg | - | - |
| | LD50 Oral | Rat | 3000 to 4000 mg/kg | - | - |
| 3-Iodo-2-propynyl butylcarbamate | LC50 Inhalation Vapour | Rat | 0.67 mg/l | 4 hours | - |
| | LD50 Oral | Rat | 1470 mg/kg | - | - |

### Irritation/Corrosion

| Product/ingredient name | Test authority / Test number | Species | Route / Result | Conc. | Remarks |
|---|---|---|---|---|---|
| Alcohols, C16-18, ethoxylated propoxylated | OECD 405 | Rabbit | Eyes - Not irritant | - | Based on studies with similar substances. |
| | OECD 404 | Rabbit | Skin - Not irritant | - | Based on studies with similar substances. |

**Skin corrosion or irritation** Not available for product and all ingredients.

**Serious eye damage/eye irritation** Not available for product and all ingredients.

**Respiratory Irritation** Not available for product and all ingredients.

**Sensitisation**

**Respiratory Sensitisation** Not available for product and all ingredients.

**Skin Sensitisation** Not available for product and all ingredients.

| Product/ingredient name | Route of exposure | Species | Result | Remarks |
|---|---|---|---|---|
| Not available for product and all ingredients. | | | | |

### CMR - ISHA Article 42 Public Notice No 2016-41 Occupational Exposure Limits

| Product/ingredient name | CAS number | Classification |
|---|---|---|
| Not available for product and all ingredients. | | |

# Section 11. Toxicological information

## Carcinogenicity

Not available for product and all ingredients.

## Germ cell mutagenicity

| Product/ingredient name | Test | Experiment | Result | Remarks |
|---|---|---|---|---|
| Not available for product and all ingredients. | | | | |

## Reproductive toxicity

| Product/ ingredient name | Test detail | Species | Exposure | Developmental toxin | Maternal toxicity | Fertility | Remarks |
|---|---|---|---|---|---|---|---|
| Not available for product and all ingredients. | | | | | | | |

**Teratogenicity** May damage the unborn child.

**Developmental effects** No known significant effects or critical hazards.

**Fertility effects** May damage fertility.

## Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|---|---|---|
| 3-Iodo-2-propynyl butylcarbamate | Category 3 | - | Respiratory tract irritation |

## Specific target organ toxicity (repeated exposure)

Not available for product and all ingredients.

## Potential chronic health effects

**General** No known significant effects or critical hazards.

**Carcinogenicity** No known significant effects or critical hazards.

**Mutagenicity** No known significant effects or critical hazards.

## Aspiration hazard

Not available for product and all ingredients.

**Other information** Not available.

# Section 12. Ecological information

**Ecotoxicity** No known significant effects or critical hazards.

| Product/ingredient name | Species | Test/Result | Exposure | Effects | Remarks |
|---|---|---|---|---|---|
| N,N'-Methylenebismorpholine | Algae | Acute EC50 10 mg/l | 72 hours | - | - |
| | Daphnia | Acute EC50 24 mg/l | 48 hours | - | - |
| | Fish | Acute LC50 >100 mg/l | 96 hours | - | - |
| | Algae | Chronic NOEC | 72 hours | - | - |

## Section 12. Ecological information

| | | | | | |
|---|---|---|---|---|---|
| | | 2.1 mg/l | | | |
| | Daphnia | Chronic NOEC 5 mg/l | - | - | - |
| Alcohols, C16-18, ethoxylated propoxylated | Daphnia | Acute EC50 >10 mg/l | 48 hours | - | Based on studies with similar substances. |
| | Algae | Acute ErL50 >10 mg/l | 72 hours | - | Based on studies with similar substances. |
| | Fish | Acute LL50 >100 mg/l | 96 hours | - | Based on studies with similar substances. |
| | Algae | Chronic EC10 0.1 to 1 mg/l | 72 hours | - | Based on studies with similar substances. |
| 3-Iodo-2-propynyl butylcarbamate | Daphnia | Acute EC50 0.04 mg/l | 48 hours | - | - |
| | Fish | Acute LC50 0.067 mg/l | 96 hours | - | - |
| | Daphnia | Chronic NOEC <0.01 mg/l | - | - | - |
| | Fish | Chronic NOEC 0.016 mg/l | - | - | - |

**Persistence/degradability**

Expected to be biodegradable.

| Product/ingredient name | Test | Result | Remarks |
|---|---|---|---|
| Alcohols, C16-18, ethoxylated propoxylated | OECD 301B | >60 % - Readily - 28 days | - |

**Bioaccumulative potential**

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| Boric acid | -1.09 | - | Low |

**Mobility in soil** Liquid. Soluble in water.

**Bioaccumulative potential** Not available.

**Other adverse effects** No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods**

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Diluted Fluid The spent diluted fluid comprises a relatively stable emulsion. Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques (e.g. emulsion splitting, coagulation and filtration) approved by the local authority. Spent fluid should never be disposed of down the drain. The aqueous phase should not be discharged into sewage systems unless provided for by local regulations; the non-aqueous phase should be disposed of as undiluted fluid. Note that separated aqueous solutions or effluents may contain metal salts as well as traces of oil and must be checked for conformity in these respects against consents given by the authorities before disposal. Further treatment may be required.

**Disposal precautions**

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | IMDG | IATA |
|---|---|---|
| **A. UN number** | Not regulated. | Not regulated. |
| **B. UN proper shipping name** | - | - |
| **C. Transport hazard class(es)** | - | - |
| **D. Packing group** | - | - |
| **E. Environmental hazards** | No. | No. |
| **F. Additional information** | - | - |

**Special precautions for user** Not available.

## Section 15. Regulatory information

**Regulation according to ISHA**

**ISHA article 117 (Harmful substances prohibited from manufacture)** None of the components are listed.

**ISHA article 118 (Harmful substances requiring permission)** None of the components are listed.

**Exposure Limits of Chemical Substances and Physical Factors**

The following components have an OEL:

Distillates (petroleum), hydrotreated heavy naphthenic
glycerol
white mineral oil, petroleum
Boric acid

| | |
|---|---|
| **ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors)** | The following components are listed: ethylene oxide |
| **ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement)** | None of the components are listed. |
| **ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up)** | The following components are listed: metal working fluids: oil mist, mineral |
| **Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** | None of the components are listed. |

## Regulation according to Chemicals Control Act

| | |
|---|---|
| **Article 20 Toxic Chemicals (K-Reach Article 20)** | Toxic |
| **Article 18 Prohibited (K-Reach Article 27)** | None of the components are listed. |
| **Article 20 Restricted (K-Reach Article 27)** | None of the components are listed. |
| **CCA Article 11 (TRI)** | The following components are listed: Boron and its compounds |
| **CCA Article 39 (Accident Precaution Chemicals)** | The following components are listed: boric acid |
| **Dangerous Materials Safety Management Act** | Not regulated. |
| **Wastes regulation** | Designated Waste |

## Regulation according to other foreign laws

| | |
|---|---|
| **Australia inventory (AIIC)** | At least one component is not listed. |
| **Canada inventory** | At least one component is not listed. |
| **China inventory (IECSC)** | All components are listed or exempted. |
| **REACH Status** | For the REACH status of this product please consult your company contact, as identified in Section 1. |
| **Japan inventory (CSCL)** | All components are listed or exempted. |
| **Korea inventory (KECI)** | All components are listed or exempted. |
| **Philippines inventory (PICCS)** | At least one component is not listed. |
| **Taiwan inventory (TCSI)** | All components are listed or exempted. |
| **United States inventory (TSCA 8b)** | At least one component is not listed. |

# Section 16. Other information

**History**

**Source of Information** Sources of key data used to compile the Safety Data Sheet: Hazard assessment review data, toxicological reviews, and product physical properties; component supplier hazard communication data; and other publically available resources.

**Date first prepared** 05/06/2008

**Number of revisions and date of last revision** 24 09/07/2024.

**Prepared by** Product Stewardship

**Key to abbreviations**

AMP = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists, an agency that promulgates exposure standards.
ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail
ADG Code = Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number = Chemical Abstracts Service Registry Number
HAZCHEM Code = Emergency action code of numbers and letters which gives information to emergency services. Its use is required by the ADG Code for Dangerous Goods in bulk.
ICAO = International Civil Aviation Organization.
IATA = International Air Transport Association, the organization promulgating rules governing shipment of goods by air.
IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.
IP 346 = A chemical screening assay for dermal toxicity. The European Commission has recommended that Method IP 346 be used as the basis for labelling certain lubricant oil base stocks for carcinogenicity. The EU Commission has stipulated that the classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. (See Note L, European Commission Directive 67/548/EEC as amended and adapted.) DMSO is a solvent.
NOHSC = National Occupational Health & Safety Commission, Australia
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
TWA = Time weighted average
STEL = Short term exposure limit
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.
TCCA = Toxic Chemical Control Act
GHS = Global Harmonized System
ISHA = Industrial Safety and Health Act
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

**Indicates information that has changed from previously issued version.**

**Notice to reader**

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from

# Section 16. Other information

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