### SAFETY DATA SHEET



## Isopropyl Mercaptan

Version 2.3

Revision Date 2023-10-11

according to GB/T 16483 and GB/T 17519

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

| Material   | <ul> <li>Isopropyl Mercaptan</li> <li>1083608, 1029885, 1021450, 1028387, 1021451, 1027451<br/>1021448, 1031054, 1021449</li> </ul>  |
|--|--|
| Company  | <ul> <li>Chevron Phillips Chemical Company LP<br/>Specialty Chemicals<br/>10001 Six Pines Drive<br/>The Woodlands, TX 77380</li> </ul>   |
| Local  | <ul> <li>Chevron Phillips Chemicals (Shanghai) Corporation<br/>Room 1810-1812, Shanghai Mart,<br/>2299 Yan An Road (W),<br/>Shanghai, PRC 200336<br/>Tel: (86-21) 22157200</li> </ul>  |
| Health:  |  |
| Asia: CHEMWATCH (<br>Mexico CHEMTREC (<br>South America SOS-(<br>Argentina: +(54)-1159<br>EUROPE: BIG +32.14<br>Austria: VIZ +43 1 400<br>Belgium: 070 245 245<br>Bulgaria: +359 2 9154<br>Croatia: +3851 2348 3<br>Cyprus: 1401<br>Czech Republic: Toxic<br>Denmark: Danish Pois<br>Estonia: BIG +32.14.5<br>Finland: 0800 147 11 | mational)<br>.9300 or 703.527.3887(int'l)<br>(+612 9186 1132) China: 0532 8388 9090<br>01-800-681-9531 (24 hours)<br>Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600<br>9839431<br>4.584545 (phone) or +32.14583516 (telefax)<br>6 43 43 (24 hours/day, 7 days/week)<br>5 (24 hours/day, 7 days/week) |

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| Iceland: 543 222<br>Ireland: BIG +32.<br>Italy: BIG +32.14<br>Latvia: State Fire<br>Poisoning and D<br>67042473. (24 h<br>Liechtenstein: Bl<br>Lithuania: +370 (<br>Luxembourg: (+3<br>Malta: +356 2398<br>The Netherlands<br>Norway: 22 59 13<br>Poland: BIG +32<br>Portugal: CIAV p<br>Romania: +40213<br>Slovakia: +421 2 | G +32.14.584545 (phone) or +32.14583516 (telefax)<br>85) 2362052<br>952) 8002 5500 (24 hours/day, 7 days/week)<br>5 2000<br>: NVIC: +31 (0)88 755 8000<br>3 00 (24 hours/day, 7 days/week)<br>.14.584545 (phone) or +32.14583516 (telefax)<br>hone number: +351 800 250 250<br>3183606<br>5477 4166   |
|--|---|
| Slovenia: Phone<br>Spain: National E   | number: 112<br>Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24  |
| hours/day, 7 day   |   |
|  |   |
| Responsible Depart   | ment : Product Safety and Toxicology Group  |
| E-mail address   | : SDS@CPChem.com  |
| Website  | : www.CPChem.com  |
|  | e substance or mixture<br>and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2  |
| GHS Classification   | and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie  | and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie<br>Danger  | and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie<br>Danger  | and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie<br>Danger<br>Form: liquid Phys   | <ul> <li>and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2</li> <li>w</li> <li>sical state: liquid Color: Clear Odor: Repulsive         <ul> <li>Highly flammable liquid and vapor. May be harmful if swallowed.<br/>Causes serious eye irritation. May cause an allergic skin<br/>reaction. May cause drowsiness or dizziness. May be harmful if<br/>swallowed and enters airways. Very toxic to aquatic life. Very</li> </ul> </li> </ul>  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie<br>Danger<br>Form: liquid Phys<br>Hazards  | <ul> <li>and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2</li> <li>w</li> <li>sical state: liquid Color: Clear Odor: Repulsive         <ul> <li>Highly flammable liquid and vapor. May be harmful if swallowed.<br/>Causes serious eye irritation. May cause an allergic skin<br/>reaction. May cause drowsiness or dizziness. May be harmful if<br/>swallowed and enters airways. Very toxic to aquatic life. Very</li> </ul> </li> </ul>  |
| GHS Classification<br>(GHS 2011)<br>Emergency Overvie<br>Danger<br>Form: liquid Phys<br>Hazards  | <ul> <li>and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.2</li> <li>w</li> <li>sical state: liquid Color: Clear Odor: Repulsive         <ul> <li>Highly flammable liquid and vapor. May be harmful if swallowed. Causes serious eye irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness. May be harmful if swallowed and enters airways. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.</li> <li>Flammable liquids, Category 2                  Acute toxicity, Category 5, Oral Serious eye damage/eye irritation, Category 2A Skin sensitization, Sub-category 1B                  Specific target organ toxicity - single exposure, Category 3, Narcotic effects                  Aspiration hazard, Category 2                  Short-term (acute) aquatic hazard, Category 1</li> </ul> </li> </ul> |

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| Signal Word :            | Danger  |
|--------------------------|---|
| Hazard Statements :      | <ul> <li>H225: Highly flammable liquid and vapor.</li> <li>H303: May be harmful if swallowed.</li> <li>H305: May be harmful if swallowed and enters airways.</li> <li>H317: May cause an allergic skin reaction.</li> <li>H319: Causes serious eye irritation.</li> <li>H336: May cause drowsiness or dizziness.</li> <li>H410: Very toxic to aquatic life with long lasting effects.</li> </ul>  |
| Precautionary Statements | <ul> <li>Prevention:</li> <li>P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.</li> <li>P233: Keep container tightly closed.</li> <li>P240: Ground/bond container and receiving equipment.</li> <li>P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.</li> <li>P242: Use only non-sparking tools.</li> <li>P243: Take precautionary measures against static discharge.</li> <li>P261: Avoid breathing dust/fume/gas/mist/apors/spray.</li> <li>P264: Wash skin thoroughly after handling.</li> <li>P271: Use only outdoors or in a well-ventilated area.</li> <li>P272: Contaminated work clothing should not be allowed out of the workplace.</li> <li>P273: Avoid release to the environment.</li> <li>P280: Wear protective gloves/ eye protection/ face protection.</li> <li>Response:</li> <li>P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.</li> <li>P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.</li> <li>P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.</li> <li>P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P312: Call a POISON CENTER/doctor if you feel unwell.</li> <li>P331: Do NOT induce vomiting.</li> <li>P332 + P313: If shin irritation or rash occurs: Get medical advice/ attention.</li> <li>P337 + P313: If skin irritation persists: Get medical advice/ attention.</li> <li>P364+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.</li> <li>P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.</li> <li>P391: Collect spillage.</li> <li>Storage:</li> <li>P403 + P235: Store in a well-ventilated place. Keep cool.</li> <li>Disposai:</li> </ul> |
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| opropyl Mercaptan             |       |  |  | SAFETY DATA SHE         |
|-------------------------------|-------|--|--|-------------------------|
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|                               |       | P501: I<br>disposal  | Dispose of contents/ containe<br>plant.  | er to an approved waste |
| CTION 3: Composition/info     | ormat | ion on ingr  | edients  |                         |
| Synonyms                      | :     | 2-propane<br>IPM<br>IC3SH  | thiol  |                         |
| Molecular formula             | :     | C3H8S  |  |                         |
| Chemical name                 |       |  | CAS-No. / EINECS-No.   | Concentration<br>[wt%]  |
| Isopropyl Mercaptan           |       |  | 75-33-2  | 95 - 100                |
| n-Propyl Mercaptan            |       |  | 107-03-9   | 1 - 5                   |
| CTION 4: First aid measure    | es    |  |  |                         |
| General advice                | :     | sheet to th  | of dangerous area. Show this<br>e doctor in attendance. Mate<br>otentially fatal pneumonia if sy | erial may produce a     |
| If inhaled                    | :     |  | ious, place in recovery position symptoms persist, call a physic                                 |                         |
| In case of skin contact       | :     | If on skin,  | rinse well with water. If on cle   | othes, remove clothes.  |
| In case of eye contact        | :     | lenses. Pi   | with water as a precaution.<br>otect unharmed eye. Keep e<br>eye irritation persists, consult    | eye wide open while     |
| If swallowed                  | :     | Keep respiratory tract clear. Never give anything by mouth to<br>an unconscious person. If symptoms persist, call a physician.<br>Take victim immediately to hospital. |  |                         |
| Notes to physician            |       |  |  |                         |
| Symptoms                      | :     | No data av   | vailable.  |                         |
| Risks                         | :     | No data av   | vailable.  |                         |
| Treatment                     | :     | No data av   | vailable.  |                         |
| CTION 5: Firefighting measure | sures |  |  |                         |
| Flash point                   | :     | -34°C (-29<br>estimated  | 9°F)   |                         |
| Autoignition temperature      | :     | No data av   | ailable  |                         |
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| propyl Mercaptan  |                |  |
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| Suitable extinguishing media  | :              | Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.  |
| Unsuitable extinguishing media  | :              | High volume water jet.   |
| Specific hazards during fire fighting   | :              | Do not allow run-off from fire fighting to enter drains or water courses.  |
| Special protective equipment for fire-fighters  | :              | Wear self-contained breathing apparatus for firefighting if necessary.   |
| Further information   | :              | Collect contaminated fire extinguishing water separately. This<br>must not be discharged into drains. Fire residues and<br>contaminated fire extinguishing water must be disposed of in<br>accordance with local regulations. For safety reasons in case<br>of fire, cans should be stored separately in closed<br>containments. Use a water spray to cool fully closed<br>containers.   |
| Fire and explosion protection   | :              | Do not spray on a naked flame or any incandescent material.<br>Take necessary action to avoid static electricity discharge<br>(which might cause ignition of organic vapors). Use only<br>explosion-proof equipment. Keep away from open flames, hot<br>surfaces and sources of ignition.  |
| Hazardous decomposition products  | :              | Sulfur.  |
| F. 544010   |                |  |
| CTION 6: Accidental release   | me             | asures   |
| •   | me             | asures   |
| •   | me             | asures<br>Use personal protective equipment. Ensure adequate<br>ventilation. Remove all sources of ignition. Evacuate<br>personnel to safe areas. Beware of vapors accumulating to<br>form explosive concentrations. Vapors can accumulate in low<br>areas.  |
| CTION 6: Accidental release   | <u>me</u><br>: | Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low   |
| <b>CTION 6: Accidental release</b><br>Personal precautions  | :              | Use personal protective equipment. Ensure adequate<br>ventilation. Remove all sources of ignition. Evacuate<br>personnel to safe areas. Beware of vapors accumulating to<br>form explosive concentrations. Vapors can accumulate in low<br>areas.<br>Prevent product from entering drains. Prevent further leakage<br>or spillage if safe to do so. If the product contaminates rivers   |
| CTION 6: Accidental release<br>Personal precautions<br>Environmental precautions                            | :              | Use personal protective equipment. Ensure adequate<br>ventilation. Remove all sources of ignition. Evacuate<br>personnel to safe areas. Beware of vapors accumulating to<br>form explosive concentrations. Vapors can accumulate in low<br>areas.<br>Prevent product from entering drains. Prevent further leakage<br>or spillage if safe to do so. If the product contaminates rivers<br>and lakes or drains inform respective authorities.<br>Contain spillage, and then collect with non-combustible<br>absorbent material, (e.g. sand, earth, diatomaceous earth,<br>vermiculite) and place in container for disposal according to |
| CTION 6: Accidental release<br>Personal precautions<br>Environmental precautions<br>Methods for cleaning up | :              | Use personal protective equipment. Ensure adequate<br>ventilation. Remove all sources of ignition. Evacuate<br>personnel to safe areas. Beware of vapors accumulating to<br>form explosive concentrations. Vapors can accumulate in low<br>areas.<br>Prevent product from entering drains. Prevent further leakage<br>or spillage if safe to do so. If the product contaminates rivers<br>and lakes or drains inform respective authorities.<br>Contain spillage, and then collect with non-combustible<br>absorbent material, (e.g. sand, earth, diatomaceous earth,<br>vermiculite) and place in container for disposal according to |
| CTION 6: Accidental release<br>Personal precautions<br>Environmental precautions<br>Methods for cleaning up | :              | Use personal protective equipment. Ensure adequate<br>ventilation. Remove all sources of ignition. Evacuate<br>personnel to safe areas. Beware of vapors accumulating to<br>form explosive concentrations. Vapors can accumulate in low<br>areas.<br>Prevent product from entering drains. Prevent further leakage<br>or spillage if safe to do so. If the product contaminates rivers<br>and lakes or drains inform respective authorities.<br>Contain spillage, and then collect with non-combustible<br>absorbent material, (e.g. sand, earth, diatomaceous earth,<br>vermiculite) and place in container for disposal according to |

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| opropyl Mercaptan   |  |
| rsion 2.3   | Revision Date 2023-10-7  |
|   | local and national regulations. Persons susceptible to skin<br>sensitization problems or asthma, allergies, chronic or<br>recurrent respiratory disease should not be employed in any<br>process in which this mixture is being used.  |
| Advice on protection against fire and explosion   | : Do not spray on a naked flame or any incandescent material.<br>Take necessary action to avoid static electricity discharge<br>(which might cause ignition of organic vapors). Use only<br>explosion-proof equipment. Keep away from open flames, hot<br>surfaces and sources of ignition.  |
| Storage   |  |
| Requirements for storage areas and containers   | : No smoking. Keep container tightly closed in a dry and well-<br>ventilated place. Containers which are opened must be<br>carefully resealed and kept upright to prevent leakage.<br>Observe label precautions. Electrical installations / working<br>materials must comply with the technological safety standards.  |
| CTION 8: Exposure controls/   | personal protection  |
|   |  |
| applicable<br>Engineering measures  |  |
|   |  |
| Adequate ventilation to contro<br>Consider the potential hazard<br>activities, and other substanc<br>personal protective equipmer<br>exposure to harmful levels of<br>recommended. The user sho                                     | nt. If engineering controls or work practices are not adequate to preve<br>this material, the personal protective equipment listed below is<br>build read and understand all instructions and limitations supplied with  |
| Adequate ventilation to contro<br>Consider the potential hazard<br>activities, and other substanc<br>personal protective equipmer<br>exposure to harmful levels of<br>recommended. The user sho                                     | ds of this material (see Section 2), applicable exposure limits, job<br>sees in the work place when designing engineering controls and selectin<br>nt. If engineering controls or work practices are not adequate to preve<br>this material, the personal protective equipment listed below is<br>build read and understand all instructions and limitations supplied with<br>on is usually provided for a limited time or under certain circumstances |
| Adequate ventilation to contro<br>Consider the potential hazard<br>activities, and other substance<br>personal protective equipment<br>exposure to harmful levels of<br>recommended. The user sho<br>the equipment since protection | ds of this material (see Section 2), applicable exposure limits, job<br>ses in the work place when designing engineering controls and selectin<br>nt. If engineering controls or work practices are not adequate to preve<br>this material, the personal protective equipment listed below is<br>build read and understand all instructions and limitations supplied with<br>on is usually provided for a limited time or under certain circumstances  |

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| opropyl Mercaptan                                 |      | SAFETY DATA SHE   |
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| Eye protection                                    | :    | Eye wash bottle with pure water. Tightly fitting safety goggles.  |
| Skin and body protection                          | :    | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals. |
| Hygiene measures                                  |      | When using do not eat or drink. When using do not smoke.<br>Wash hands before breaks and at the end of workday.   |
| CTION 9: Physical and chemi                       | ical | properties  |
| Information on basic physi                        | cal  | and chemical properties   |
| Appearance  |      |   |
| Form  | :    | liquid  |
| Physical state<br>Color                           | :    | liquid<br>Clear   |
| Odor  | :    | Repulsive   |
| Safety data                                       |      |   |
| Flash point                                       | :    | -34°C (-29°F)<br>estimated  |
| Lower explosion limit                             | :    | No data available   |
| Upper explosion limit                             | :    | No data available   |
| Flammability (solid, gas)<br>Oxidizing properties | :    | yes   |
| Autoignition temperature                          | :    | No data available   |
| Molecular formula                                 | :    | C3H8S   |
| Molecular weight                                  | :    | 90.2 g/mol  |
| рН  | :    | Not applicable  |
| Pour point  | :    | No data available   |
| Boiling point/boiling range                       | :    | 51°C (124°F)  |
| Vapor pressure                                    | :    | 8.80 PSI<br>at 37.8°C (100.0°F)   |
| Relative density                                  | :    | 0.82<br>at 15.6 °C (60.1 °F)  |
| Water solubility                                  | :    | slightly soluble  |
| Partition coefficient: n-<br>octanol/water        | :    | No data available   |
| Viscosity, dynamic                                | :    | 0.369 cP  |

| propyl Mercaptan   | SAFETY DATA SHE  |
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| sion 2.3   | Revision Date 2023-10  |
| Relative vapor density                                     | : 2.62<br>(Air = 1.0)  |
| Evaporation rate   | : 1<br>estimated   |
| Percent volatile   | : > 99 %   |
| Conductivity   | : No data available  |
| CTION 10: Stability and reacti                             | vity   |
| Reactivity   | : Stable under recommended storage conditions.   |
| Chemical stability   | : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. |
| Possibility of hazardous rea                               | ctions   |
| Hazardous reactions  | : Hazardous reactions: Hazardous polymerization does not occur.  |
|  | Hazardous reactions: Vapors may form explosive mixture with air.   |
| Conditions to avoid<br>Hazardous decomposition<br>products | : Heat, flames and sparks.<br>: Sulfur   |
| Other data   | : No decomposition if stored and applied as directed.  |
| CTION 11: Toxicological infor                              | mation   |
| In a second Management                                     |  |
| Isopropyl Mercaptan<br>Acute oral toxicity                 | : Acute toxicity estimate: 2,496 mg/kg<br>Method: Calculation method   |
| Isopropyl Mercaptan<br>Acute inhalation toxicity           | : Acute toxicity estimate: > 20 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapor<br>Method: Calculation method                     |
| Isopropyl Mercaptan<br>Acute dermal toxicity               | : Acute toxicity estimate: > 2,000 mg/kg<br>Method: Calculation method   |
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|---|------------------------|---|
| Eye irritation       : slight irritation. largely based on animal evidence.         Isopropyl Mercaptan<br>Sensitization       : The product is a skin sensitizer, sub-category 1B.<br>largely based on animal evidence.         Repeated dose toxicity       :         Isopropyl Mercaptan       : Species: Rat, male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk         NCEL:       0.367 mg/l 99.6 ppm<br>Lowest observable effect level: 1.488 mg/l 403.4 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Liver, Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.         Species: Rat, male and female<br>Sex: male and female<br>Application Route: crai gavage<br>Dose: 10, 50, 200 mg/kg bw/day<br>Exposure time: 42-53 dayk<br>Number of exposures: Daily<br>NOEL: 50 mg/kg<br>Lowest observable effect level: 200 mg/kg<br>Method: OECD Guideline 422<br>Target Organs: Liver, Blood<br>Information given is based on data obtained from similar<br>substances.         n-Propyl Mercaptan       Species: Rat, male and female<br>Sex: male and female<br>Application Route: inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hr/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.         n-Propyl Mercaptan       Species: Rat, male and female<br>Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hr/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Information given is based on data obtained from similar<br>substances.   |                        |   |
| Sensitization       : The product is a skin sensitizer, sub-category 18. largely based on animal evidence.         Repeated dose toxicity       Isopropyl Mercaptan         Isopropyl Mercaptan       : Species: Rat, male and female Sex: male and female Application Route: Inhalation Exposure time: 13 wks Number of exposures: 6hrs/d, 5 d/wk NOEL: 0.367 mg/l 98.6 pm Lowest observable effect level: 1.1488 mg/l 403.4 ppm Method: OECD Test Guideline 413         Target Organs: Liver, Kidney, Upper respiratory tract, Blood Information given is based on data obtained from similar substances.         Species: Rat, male and female Sex: male and female Sex: male and female Application Route: oral gavage Dose: 10, 50, 200 mg/kg bw/day Exposure time: 42-53 days Number of exposures: Daily NOEL: 500 mg/kg         NOEL: 50 mg/kg       Lowest observable effect level: 200 mg/kg Method: OECD Guideline 422 Target Organs: Liver, Riod Information given is based on data obtained from similar substances.         Species: Rat, male and female Sex: male and female Sex: male and female Application Route: Inhalation Exposure time: 12.200 mg/kg Method: OECD Guideline 422 Target Organs: Kiver, Blood Information given is based on data obtained from similar substances.         n-Propyl Mercaptan       Species: Rat, male and female Sex: ma   |                        | : slight irritation. largely based on animal evidence.  |
| Isopropyl Mercaptan       : Species: Rat, male and female         Application Route: Inhalation       Exposure time: 13 wks         Number of exposures: 6hrs/d, 5 d/wk       NOEL: 0.367 mg/l 99 6 ppm         Lowest observable effect level: 1.488 mg/l 403.4 ppm       Method: OED Test Guideline 413         Target Organs: Liver, Kidney, Upper respiratory tract, Blood       Information given is based on data obtained from similar         substances.       Species: Rat, male and female         Sex: male and female       Sex: male and female         Sex: male and female       Application Route: Inhalation         Exposure time: 13 wks       Number of exposures: 6hrs/d, 5 d/wk         NOEL: - 50 mg/bp       Method: OECD Test Guideline 413         Target Organs: Kidney, Upper respiratory tract, Blood       Information given is based on data obtained from similar substances.         n-Propyl Mercaptan       Species: Rat, male and female       Sex: male and female  |                        |   |
| Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: 0.367 mg/196 6 pm<br>Lowest observable effect level: 1.488 mg/l 403.4 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Liver, Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.Species: Rat, male and female<br>Sex: male and female<br>Application Route: oral gavage<br>Dose: 10, 50, 200 mg/kg bw/day<br>Exposure time: 42-53 days<br>Number of exposures: Daily<br>NOEL: 50.mg/kg<br>Lowest observable effect level: 200 mg/kg<br>Lowest observable effect level: 200 mg/kg<br>Method: OECD Guideline 422<br>Target Organs: Liver, Blood<br>Information given is based on data obtained from similar<br>substances.Species: Rat, male and female<br>Sex: male and fe | Repeated dose toxicity |   |
| Sex: male and female<br>Application Route: oral gavage<br>Dose: 10, 50, 200 mg/kg bw/day<br>Exposure time: 42-53 days<br>Number of exposures: Daily<br>NOEL: 50 mg/kg<br>Lowest observable effect level: 200 mg/kg<br>Method: OECD Guideline 422<br>Target Organs: Liver, Blood<br>Information given is based on data obtained from similar<br>substances.Species: Rat, male and female<br>Sex: male and female<br>Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.n-Propyl MercaptanSpecies: Rat, male and female<br>Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.n-Propyl MercaptanSpecies: Rat, male and female<br>Sex: male and female<br>Application Route: Inhalation<br>Dose: 9, 97, 196 ppm<br>Exposure time: 13 wks<br>Number of exposures: 6 hrs/d, 5 d/wk<br>NOEL: 196 ppm<br>Method: OECD Test Guideline 413<br>Information given is based on data obtained from similar<br>substances.  | Isopropyl Mercaptan    | Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: 0.367 mg/l 99.6 ppm<br>Lowest observable effect level: 1.488 mg/l 403.4 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Liver, Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar |
| Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar<br>substances.<br>n-Propyl Mercaptan<br>Species: Rat, male and female<br>Sex: male and female<br>Application Route: Inhalation<br>Dose: 9, 97, 196 ppm<br>Exposure time: 13 wks<br>Number of exposures: 6 hrs/d, 5 d/wk<br>NOEL: 196 ppm<br>Method: OECD Test Guideline 413<br>Information given is based on data obtained from similar<br>substances.  |                        | Sex: male and female<br>Application Route: oral gavage<br>Dose: 10, 50, 200 mg/kg bw/day<br>Exposure time: 42-53 days<br>Number of exposures: Daily<br>NOEL: 50 mg/kg<br>Lowest observable effect level: 200 mg/kg<br>Method: OECD Guideline 422<br>Target Organs: Liver, Blood<br>Information given is based on data obtained from similar                               |
| Sex: male and female<br>Application Route: Inhalation<br>Dose: 9, 97, 196 ppm<br>Exposure time: 13 wks<br>Number of exposures: 6 hrs/d, 5 d/wk<br>NOEL: 196 ppm<br>Method: OECD Test Guideline 413<br>Information given is based on data obtained from similar<br>substances.   |                        | Sex: male and female<br>Application Route: Inhalation<br>Exposure time: 13 wks<br>Number of exposures: 6hrs/d, 5 d/wk<br>NOEL: >= 196 ppm<br>Method: OECD Test Guideline 413<br>Target Organs: Kidney, Upper respiratory tract, Blood<br>Information given is based on data obtained from similar   |
| DS Number:10000068542   | n-Propyl Mercaptan     | Sex: male and female<br>Application Route: Inhalation<br>Dose: 9, 97, 196 ppm<br>Exposure time: 13 wks<br>Number of exposures: 6 hrs/d, 5 d/wk<br>NOEL: 196 ppm<br>Method: OECD Test Guideline 413<br>Information given is based on data obtained from similar  |
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| Genotoxicity in vitro  | . Test Turse, reverse southfing and a   |
|------------------------|---|
| Isopropyl Mercaptan    | : Test Type: reverse mutation assay<br>Test system: Salmonella typhimurium<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative  |
|                        | Test Type: Mouse lymphoma assay<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 490<br>Result: negative   |
|                        | Test Type: Micronucleus test<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 487<br>Result: negative  |
| n-Propyl Mercaptan     | Test Type: Ames test<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative  |
|                        | Test Type: Cytogenetic assay<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 473<br>Result: negative  |
|                        | Test Type: Mouse lymphoma assay<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 476<br>Result: negative<br>Remarks: Information given is based on data obtained from<br>similar substances.   |
| Reproductive toxicity  |   |
| Isopropyl Mercaptan    | <ul> <li>Species: Rat<br/>Sex: male and female<br/>Application Route: oral gavage<br/>Dose: 10, 50, 200 mg/kg/bw<br/>Exposure time: 42 d<br/>Number of exposures: Daily<br/>Method: OECD Guideline 422<br/>NOAEL Parent: &gt;= 200 mg/kg<br/>NOAEL F1: 50 mg/kg<br/>Information given is based on data obtained from similar<br/>substances.<br/>No adverse effects expected</li> </ul> |
| Developmental Toxicity |   |
| Isopropyl Mercaptan    | : Species: Rat<br>Application Route: Inhalation<br>Dose: 11, 99, 195 ppm<br>Exposure time: 6h/d<br>Test period: GD 9 - 19<br>Method: OECD Guideline 414   |
|                        |   |

| propyl Mercaptan                           | SAFETY DATA SHE  |
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|  | NOAEL Teratogenicity: >= 195 ppm<br>NOAEL Maternal: >= 195 ppm<br>Information given is based on data obtained from similar<br>substances.  |
|  | Species: Mouse<br>Application Route: Inhalation<br>Dose: 11, 99, 195 ppm<br>Exposure time: 6h/d<br>Test period: GD 9 - 19<br>Method: OECD Guideline 414<br>NOAEL Teratogenicity: >= 195 ppm<br>NOAEL Maternal: >= 195 ppm<br>Information given is based on data obtained from similar<br>substances. |
| Isopropyl Mercaptan<br>Aspiration toxicity | : May be harmful if swallowed and enters airways.  |
| CMR effects                                |  |
| Isopropyl Mercaptan                        | : Carcinogenicity: Not available<br>Mutagenicity: In vitro tests did not show mutagenic effects<br>Reproductive toxicity: No evidence of adverse effects on<br>sexual function and fertility, or on development, based on<br>animal experiments.   |
| n-Propyl Mercaptan                         | Carcinogenicity: Not available<br>Mutagenicity: In vitro tests did not show mutagenic effects<br>Reproductive toxicity: No evidence of adverse effects on<br>sexual function and fertility, or on development, based on<br>animal experiments., No toxicity to reproduction                          |
| Isopropyl Mercaptan<br>Further information | : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Solvents may degrease the skin.   |
| CTION 12: Ecological infor                 | mation   |
|  |  |
| Toxicity to fish                           |  |
| Isopropyl Mercaptan                        | : LC50: 34 mg/l<br>Exposure time: 96 h<br>semi-static test Analytical monitoring: yes<br>Method: OECD Test Guideline 203<br>Information given is based on data obtained from similar<br>substances.  |
| n-Propyl Mercaptan                         | LC50: 1.3 mg/l<br>Exposure time: 96 h<br>Species: Pimephales promelas (fathead minnow)<br>semi-static test Analytical monitoring: yes<br>Test substance: yes<br>Method: OECD Test Guideline 203<br>Toxic to aquatic organisms.   |
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| Isopropyl Mercaptan                | <ul> <li>EC50: 0.25 - 0.5 mg/l</li> <li>Exposure time: 48 h</li> <li>Species: Daphnia magna (Water flea)</li> <li>static test Test substance: yes</li> <li>Method: OECD Test Guideline 202</li> </ul>                    |  |  |
|------------------------------------|--|--|--|
| n-Propyl Mercaptan                 | EC50: 70 μg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Analytical monitoring: yes<br>Test substance: yes<br>Method: OECD Test Guideline 202<br>Very toxic to aquatic organisms.                  |  |  |
| Toxicity to algae                  |  |  |  |
| Isopropyl Mercaptan                | ErC50: 21.9 mg/l<br>Exposure time: 72 h<br>Species: Pseudokirchneriella subcapitata (green algae)<br>static test Method: OECD Test Guideline 201   |  |  |
| n-Propyl Mercaptan                 | ErC50: 3 mg/l<br>Exposure time: 72 h<br>Species: Pseudokirchneriella subcapitata (algae)<br>Growth inhibition Method: OECD Test Guideline 201<br>Information given is based on data obtained from similar<br>substances. |  |  |
| <b>M-Factor</b><br>propane-2-thiol | : M-Factor (Acute Aquat. Tox.) 1   |  |  |
|                                    | M-Factor (Chron. Aquat. Tox.) 1  |  |  |
| <b>M-Factor</b><br>propane-1-thiol | : M-Factor (Acute Aquat. Tox.) 10  |  |  |
|                                    | M-Factor (Chron. Aquat. Tox.) 10   |  |  |
| Toxicity to bacteria               |  |  |  |
| Isopropyl Mercaptan                | : EC50: 880.5 mg/l<br>Exposure time: 3 h<br>Respiration inhibition<br>Method: OECD Test Guideline 209  |  |  |
| n-Propyl Mercaptan                 | EC50: 880.5 mg/l<br>Exposure time: 3 h<br>Respiration inhibition<br>Method: OECD Test Guideline 209<br>Information given is based on data obtained from similar<br>substances.   |  |  |
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| Biodegradability  |   |  |  |
|---|---|--|--|
| Isopropyl Mercaptan   | <ul> <li>aerobic</li> <li>Result: Not readily biodegradable.</li> <li>0 %</li> <li>Testing period: 28 Days</li> <li>Method: OECD Test Guideline 301D</li> </ul> |  |  |
| n-Propyl Mercaptan  | <ul> <li>aerobic</li> <li>Result: Not readily biodegradable.</li> <li>17 %</li> <li>Testing period: 28 Days</li> <li>Method: OECD Test Guideline 301</li> </ul> |  |  |
| Bioaccumulation   |   |  |  |
| Isopropyl Mercaptan   | : Bioconcentration factor (BCF): 6<br>Method: QSAR modeled data<br>This material is not expected to bioaccumulate.  |  |  |
| n-Propyl Mercaptan  | : Bioconcentration factor (BCF): 7.26<br>This material is not expected to bioaccumulate.  |  |  |
| Mobility  |   |  |  |
| Isopropyl Mercaptan   | : Method: Calculation, Mackay Level III Fugacity Model<br>The product will be dispersed amongst the various<br>environmental compartments (soil/ water/ air).   |  |  |
| n-Propyl Mercaptan  | : Method: Calculation, Mackay Level III Fugacity Model<br>The product will be dispersed amongst the various<br>environmental compartments (soil/ water/ air).   |  |  |
| Results of PBT assessment<br>Isopropyl Mercaptan                              | : Non-classified PBT substance, Non-classified vPvB substance   |  |  |
| n-Propyl Mercaptan  | : Non-classified PBT substance, Non-classified vPvB substance   |  |  |
| Additional ecological<br>information<br>Ecotoxicology Assessment              | : Very toxic to aquatic life with long lasting effects.   |  |  |
| Short-term (acute) aquatic<br>hazard<br>Long-term (chronic) aquatic<br>hazard | <ul><li>Very toxic to aquatic life.</li><li>Very toxic to aquatic life with long lasting effects.</li></ul>   |  |  |
| SECTION 12: Disposal considera  |   |  |  |

### SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

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|  | SAFETY DATA SHE   |
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| opropyl Mercaptan  |   |
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| may meet the criteria of a ha<br>other State and local regulat<br>regulated components may | purpose or recycle if possible. This material, if it must be discarded,<br>azardous waste as defined by US EPA under RCRA (40 CFR 261) or<br>tions. Measurement of certain physical properties and analysis for<br>be necessary to make a correct determination. If this material is<br>aste, federal law requires disposal at a licensed hazardous waste |
| Product  | : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.  |
| Contaminated packaging   | : Empty remaining contents. Dispose of as unused product.<br>Do not re-use empty containers. Do not burn, or use a cutting<br>torch on, the empty drum.   |
| CTION 14: Transport information  | ation   |
|  | shown here are for bulk shipments only, and may not apply to kages (see regulatory definition).   |
| Goods Regulations for additietc.) Therefore, the information                               | nestic or international mode-specific and quantity-specific Dangerous<br>ional shipping description requirements (e.g., technical name or name<br>tion shown here, may not always agree with the bill of lading shipping<br>Flashpoints for the material may vary slightly between the SDS and th   |
| <b>US DOT (UNITED STATES</b><br>UN2402, PROPANETHIC  | DEPARTMENT OF TRANSPORTATION)<br>DLS, 3, II   |
|  | <b>VAL MARITIME DANGEROUS GOODS)</b><br>DLS, 3, II, (-34 °C c.c.), MARINE POLLUTANT, (ISOPROPYL<br>YL MERCAPTAN)  |
| IATA (INTERNATIONAL AI<br>UN2402, PROPANETHIC  | R TRANSPORT ASSOCIATION)<br>DLS, 3, II  |
| UN2402, PROPANETHIC  | NGEROUS GOODS BY ROAD (EUROPE))<br>DLS, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS,<br>TAN, N-PROPYL MERCAPTAN)  |
| DANGEROUS GOODS (EU  | IIOLS, 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOPROPYL   |
| OF DANGEROUS GOODS   | MENT CONCERNING THE INTERNATIONAL CARRIAGE<br>BY INLAND WATERWAYS)<br>DLS, 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOPROPYL<br>YL MERCAPTAN)  |
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| <u> </u>   | TION 15: Regulatory information   |  |  |  |  |  |
|--|---|--|--|--|--|--|
| Classification and Labeling of<br>Commonly Used Dangerous<br>Chemical Substances   | : Primary label: Combustible Liquid.  |  |  |  |  |  |
| Notification statusEurope REACH: This product is in full compliance according to REACUnited States of America (USA): On or in compliance with the active portion of the<br>TSCAAustralia AIIC: On the inventory, or in compliance with the inventoryNew Zealand NZIoC: On the inventory, or in compliance with the inventoryJapan ENCS: On the inventory, or in compliance with the inventoryKorea KECI: A substance(s) in this product was not registered,<br>notified to be registered, or exempted from registrati<br>by CPChem according to K-REACH regulations.<br>Importation or manufacture of this product is still<br>permitted provided the Korean Importer of Record h<br>themselves notified the substance or the exported<br> |   |  |  |  |  |  |
| Philippines PICCS<br>Taiwan TCSI<br>China IECSC  | <ul> <li>On the inventory, or in compliance with the inventory</li> <li>On the inventory, or in compliance with the inventory</li> <li>On the inventory, or in compliance with the inventory</li> </ul>   |  |  |  |  |  |
| TION 16: Other information   |   |  |  |  |  |  |
| Legacy SDS Number  | : 38500   |  |  |  |  |  |
| previous versions.<br>The information in this SDS pe<br>The information provided in thi  | last version are highlighted in the margin. This version replaces all<br>ertains only to the product as shipped.<br>is Safety Data Sheet is correct to the best of our knowledge,<br>ate of its publication. The information given is designed only as a<br>ise, processing, storage, transportation, disposal and release and is<br>ty or quality specification. The information relates only to the |  |  |  |  |  |
| guidance for safe handling, us<br>not to be considered a warran<br>specific material designated a  | nd may not be valid for such material used in combination with any ess, unless specified in the text.   |  |  |  |  |  |
| guidance for safe handling, us<br>not to be considered a warran<br>specific material designated an<br>other materials or in any proce<br>Key or legend to a<br>ACGIH American Conf   | ess, unless specified in the text.           abbreviations and acronyms used in the safety data sheet           rerence of         LD50   |  |  |  |  |  |
| guidance for safe handling, us<br>not to be considered a warrand<br>specific material designated an<br>other materials or in any proce<br>Key or legend to a<br>ACGIH American Conf<br>Government In<br>AIIC Australian Inve   | ess, unless specified in the text.<br>bbreviations and acronyms used in the safety data sheet<br>erence of LD50 Lethal Dose 50%<br>dustrial Hygienists LOAEL Lowest Observed Adverse Effect   |  |  |  |  |  |
| guidance for safe handling, us<br>not to be considered a warrant<br>specific material designated an<br>other materials or in any proce<br>Key or legend to a<br>ACGIH American Conf<br>Government In<br>AIIC Australian Inve<br>Chemicals  | ess, unless specified in the text.<br>abbreviations and acronyms used in the safety data sheet<br>ference of LD50 Lethal Dose 50%<br>dustrial Hygienists  |  |  |  |  |  |

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| CNS    | Central Nervous System                                      | NTP   | National Toxicology Program  |
|--------|---|-------|--|
| CAS    | Chemical Abstract Service                                   | NZIOC | New Zealand Inventory of<br>Chemicals  |
| EC50   | Effective Concentration                                     | NOAEL | No Observable Adverse Effect<br>Level  |
| EC50   | Effective Concentration 50%                                 | NOEC  | No Observed Effect Concentration   |
| EGEST  | EOSCA Generic Exposure<br>Scenario Tool                     | OSHA  | Occupational Safety & Health<br>Administration   |
| EOSCA  | European Oilfield Specialty<br>Chemicals Association        | PEL   | Permissible Exposure Limit   |
| EINECS | European Inventory of Existing<br>Chemical Substances       | PICCS | Philippines Inventory of<br>Commercial Chemical Substances                                 |
| MAK    | Germany Maximum Concentration<br>Values                     | PRNT  | Presumed Not Toxic   |
| GHS    | Globally Harmonized System                                  | RCRA  | Resource Conservation Recovery<br>Act  |
| >=     | Greater Than or Equal To                                    | STEL  | Short-term Exposure Limit  |
| IC50   | Inhibition Concentration 50%                                | SARA  | Superfund Amendments and<br>Reauthorization Act.   |
| IARC   | International Agency for Research<br>on Cancer              | TLV   | Threshold Limit Value  |
| IECSC  | Inventory of Existing Chemical<br>Substances in China       | TWA   | Time Weighted Average  |
| ENCS   | Japan, Inventory of Existing and<br>New Chemical Substances | TSCA  | Toxic Substance Control Act  |
| KECI   | Korea, Existing Chemical<br>Inventory                       | UVCB  | Unknown or Variable Composition,<br>Complex Reaction Products, and<br>Biological Materials |
| <=     | Less Than or Equal To                                       | WHMIS | Workplace Hazardous Materials<br>Information System  |
| LC50   | Lethal Concentration 50%                                    | ATE   | Acute toxicity estimate  |