

SHD Crude

SECTION 1. IDENTIFICATION

| | |
|---|---|
| Product Identifier | SHD Crude |
| Other Means of Identification | Produced Crude, Crude Oil, Sweet Crude |
| Product Family | Crude Oil |
| Recommended Use | Refinery feedstock. |
| Restrictions on Use | None known. |
| Manufacturer/Supplier Identifier | ConocoPhillips Surmont Partnership P.O. Box 130, 401 - 9th Ave. SW Calgary, Alberta T2P 2H7 |
| Emergency Phone No. | Chemtrec, 800-424-9300, (24 hr) CANUTEC, 1-888-CAN-UTEC (226-8832), (24 hr) |

SECTION 2. HAZARD IDENTIFICATION

Classification

Flammable liquid - Category 1; Acute toxicity (Oral) - Category 3; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2; Aspiration hazard - Category 1

Label Elements



Signal Word:
Danger

Hazard Statement(s):

| | |
|------|---|
| H225 | Highly flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H320 | Causes eye irritation. |
| H335 | May cause respiratory irritation. |
| H401 | Toxic to aquatic life. |

Precautionary Statement(s):

| | |
|------|---|
| P210 | Keep away from heat, sparks, open flames, and hot surfaces. – No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical, ventilating, lighting, and other equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing vapours. |
| P280 | Wear protective gloves/protective clothing. |

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Other Hazards
EMERGENCY OVERVIEW :

FLAMMABLE LIQUID AND VAPOUR. Highly flammable. May form flammable/explosive vapour-air mixtures. Electrostatic charges may be generated during handling. Electrostatic discharges may cause fire.

CONTAINS HYDROGEN SULPHIDE. Product may contain hydrogen sulfide gas. H₂S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary edema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000 ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H₂S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H₂S will accumulate in the body tissue after repeated exposure.

General Hygiene Comments :

Do NOT eat, drink or store food in work areas.

Remove contaminated clothing and protective equipment before entering eating areas or leaving work area.

Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | % | Other Identifiers |
|------------------------|-----------|---------------|-----------------------------|
| Crude Oil | 8002-05-9 | 100 | Petroleum crude oil |
| Methane | 74-82-8 | <0.01 | Methyl hydride |
| Ethane | 74-84-0 | <0.01 | Ethyl hydride |
| Propane | 74-98-6 | 0.01 - 0.05 | Propyl hydride |
| Isobutane | 75-28-5 | 0.05 - 0.25 | 2-methylpropane |
| n-Butane | 106-97-8 | 0.25 - 0.75 | Butyl hydride |
| Isopentane | 78-78-4 | 3.25 - 3.75 | 2-methylbutane |
| n-Pentane | 109-66-0 | 3.50 - 4.00 | Pentyl hydride |
| Hexanes | 110-54-3 | 3.50 - 4.00 | Not available |
| Heptanes | 110-54-3 | 2.25 - 2.75 | Not available |
| Octanes | 110-54-3 | 0.75 - 1.25 | Not available |
| Nonanes+ | 110-54-3 | 87.00 - 89.00 | Not available |
| Benzene | 71-43-2 | 0.10 - 0.25 | Benzol |
| Toluene | 108-88-3 | 0.25 - 0.75 | Methylbenzene |
| Ethylbenzene | 100-41-4 | 0.01 - 0.05 | Phenylethane |
| Xylene (mixed isomers) | 1330-20-7 | 0.15 - 0.50 | 1,2/1,3/1,4-dimethylbenzene |
| Hydrogen Sulfide | 7783-06-4 | 1 - 5 wppm | Sulfur hydride, acid gas |

Notes

Concentrations are expressed in % weight/weight.

SECTION 4. FIRST-AID MEASURES

First-aid Measures
Inhalation

Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment).

Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If the victim has difficulty breathing or tightness in the chest, is dizzy, vomiting, or unresponsive, administer oxygen with rescue breathing or CPR as required. Obtain medical attention immediately.

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Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Immediately call a Poison Centre or doctor. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled:

Can irritate the nose and throat. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

If in eyes:

May cause moderate to severe irritation. Symptoms include sore, red eyes, and tearing.

If swallowed:

Small amounts can irritate the mouth, throat and stomach.

May be drawn into the lungs if swallowed or vomited, causing severe lung damage. Death can result.

Immediate Medical Attention and Special Treatment

Special Instructions

Treat symptomatically. Consult a Poison Control Centre for guidance.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Small fire: Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Large fire: Water spray, fog or regular foam.

Do not use straight streams.

Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads:

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Cool containers with flooding quantities of water until well after fire is out.

Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

ALWAYS stay away from tanks engulfed in fire.

For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Unsuitable Extinguishing Media

Do not use water in a stream or jet.

Specific Hazards Arising from the Product

May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire and/or health hazard.

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Special Protective Equipment and Precautions for Fire-fighters

Wear full protective clothing and self-contained breathing apparatus. Fight fire from a safe distance or a protected location. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Evacuate downwind locations. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Minimize the use of water to prevent environmental contamination.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Do NOT use combustible materials such as sawdust. Place used absorbent into suitable, covered, labelled containers for disposal.

Large spills or leaks: dike spilled product to prevent runoff. Do not direct water at spill or source. Knock down vapour with fog or fine water spray.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Prevent uncontrolled release of product. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Do not use near welding operations or other high energy sources. Do not weld, cut or perform hot work on empty container until all traces of product have been removed. Electrically bond and ground equipment. Ground clips must contact bare metal. Do not carry or transfer this product in an enclosed space (e.g. in an elevator or inside a vehicle). Wear personal protective equipment to avoid direct contact with this chemical. Do not puncture or incinerate container even when empty.

Conditions for Safe Storage

Store in an area that is: cool, temperature-controlled, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity), clear of combustible and flammable materials (e.g. old rags, cardboard), out of direct sunlight and away from heat and ignition sources.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| Control Parameters | ACGIH TLV® | | OSHA PEL | | AIHA WEEL | |
|--------------------|-----------------|------|----------|---------|-----------|-----|
| | TWA | STEL | TWA | Ceiling | 8-hr TWA | TWA |
| Methane | Not established | | | | | |
| Ethane | Not established | | | | | |

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|------------------------|-----------------|-----------------|----------|--------|--|
| Propane | 1000 ppm | | | | |
| Isobutane | | 1000 ppm | | | |
| n-Butane | | 1000 ppm | 800 ppm | | |
| Isopentane | 600 ppm | | | | |
| n-Pentane | 600 ppm | | 1000 ppm | | |
| Hexanes | 50 ppm Skin | | 500 ppm | | |
| Heptanes | 400 ppm | 500 ppm | 500 ppm | | |
| Octanes | 300 ppm | | 500 ppm | | |
| Nonanes | 200 ppm | | | | |
| Benzene | 0.5 ppm A4 Skin | 0.5 ppm A4 Skin | | | |
| Toluene | 20 ppm A4 | | 200 ppm | | |
| Ethylbenzene | 100 ppm | 125 ppm | | | |
| Xylene (mixed isomers) | 100 ppm A4 | 150 ppm A4 | | | |
| Hydrogen Sulfide | 1 ppm | 5 ppm | | 20 ppm | |

Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Avoid repeated or prolonged skin contact. Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Not normally required if product is used as directed. Use appropriate OSHA/NIOSH approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

| | |
|--|--|
| Appearance | Brown - black liquid. |
| Odour | Hydrocarbon |
| Odour Threshold | Not available |
| pH | Not applicable |
| Melting Point/Freezing Point | Not available (melting); Not available (freezing) |
| Initial Boiling Point/Range | 30 °C |
| Flash Point | < -20.5 °C (closed cup) |
| Evaporation Rate | Not available |
| Flammability (solid, gas) | Not applicable (liquid). |
| Upper/Lower Flammability or Explosive Limit | Not available (upper); Not available (lower) |
| Vapour Pressure | 53.1 kPa at 37.8°C (100°F) |
| Vapour Density (air = 1) | > 1 (estimated) |
| Relative Density (water = 1) | 0.921 - 0.923 at 15 °C |
| Solubility | Practically insoluble in water; Highly soluble in common organic solvents. |

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| Partition Coefficient, n-Octanol/Water (Log Kow) | Not available |
| Auto-ignition Temperature | Not available |
| Decomposition Temperature | Not available |
| Viscosity | 67.91 centistokes at 40°C (104°F) (kinematic) |

Other Information

| | |
|--------------------------|---------------|
| Physical State | Liquid |
| Molecular Formula | Not available |
| Molecular Weight | Not available |

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Not sensitive to mechanical impact.

Conditions to Avoid

Heat. High temperatures. Open flames, sparks, static discharge, heat and other ignition sources. Incompatible materials.

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).

Hazardous Decomposition Products

Combustion releases carbon dioxide, trace amounts of sulfur oxides, and nitrogen oxides. A lack of oxygen during combustion can produce carbon monoxide and other toxic and flammable products. Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Information presented below is for the entire product, unless otherwise specified.

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

| Chemical Name | LC50 | LD50 (oral) | LD50 (dermal) |
|---------------|---|--------------------|----------------|
| Methane | Not available | Not available | Not applicable |
| Ethane | Not available | Not available | Not applicable |
| Propane | > 800000 ppm (rat) (30-minute exposure) | Not applicable | Not applicable |
| Isobutane | 368000 mg/kg (male mouse) (4-hour exposure) (vapour) | > 5000 mg/kg | > 5000 mg/kg |
| n-Butane | 658 mg/L (rat) (4-hour exposure) | Not available | Not available |
| Isopentane | 140000 ppm (mouse) (2-hour exposure) (vapour) | > 2000 mg/kg (rat) | Not available |

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| n-Pentane | 6106 ppm (rat) (4-hour exposure) | > 2000 mg/kg (rat) | Not available |
| Hexanes | 73680 ppm (rat) (4-hour exposure) (vapour) | 32290 mg/kg (male rat) | > 3295 mg/kg (rabbit) |
| Heptanes | ~ 25000 ppm (rat) (4-hour exposure) | > 15000 mg/kg (rat) | Not available |
| Octanes | 25250 ppm (rat) (4-hour exposure) | Not available | Not available |
| Nonanes | 3200 ppm (rat) (4-hour exposure) | Not available | Not available |
| Decanes | 72300 mg/m ³ (mouse) (2-hour exposure) (aerosol) | Not available | Not available |
| Benzene | 13700 ppm (rat) (4-hour exposure) | 930 mg/kg (rat) | > 8240 mg/kg (rabbit) |
| Toluene | 7585 ppm (rat) (4-hour exposure) | 5580 mg/kg (male rat) | 12125 mg/kg (rabbit) |
| Ethylbenzene | ~ 4000 ppm (rat) (4-hour exposure) | 3500 mg/kg (rat) | 15380 mg/kg (rabbit) |
| Xylene (mixed isomers) | 6350 ppm (male rat) (4-hour exposure) | 3523 mg/kg (rat) | > 1700 mg/kg (rabbit) |
| Hydrogen Sulfide | 444 ppm (rat) (4-hour exposure) | Not available | Not available |

Skin Corrosion/Irritation

May cause mild irritation based on information for closely related chemicals. (Crude Oil) contact may cause irritation to the skin and mucous membranes upon prolonged and/or repeated skin contact. Prolonged or repeated contact to petroleum oil with skin may cause defatting of the skin leading to redness, itching, inflammation, cracking, dermatitis (rash).

Serious Eye Damage/Irritation

May cause mild irritation based on information for closely related chemicals. (Crude Oil)
May be irritating to eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Not an expected route of exposure, but vapours may cause irritation of the nose and throat. May be harmful.

Skin Absorption

Liquid may be absorbed through the skin if large areas of skin are exposed. May be harmful.

Ingestion

May be harmful Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

If small amounts are ingested: can irritate the mouth, throat and stomach.

If large amounts are ingested: harmful.

Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Material in general is not expected to cause harm. May cause damage to organs based on studies in people and animals. Following skin contact: symptoms may include dry, red, cracked skin (dermatitis).

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Respiratory and/or Skin Sensitization

Not a respiratory sensitizer.

Not a skin sensitizer.

Carcinogenicity

| Chemical Name | IARC | ACGIH® | NTP | OSHA |
|---------------|---------|--------|------------------|------------|
| Benzene | Group 1 | A1 | Known carcinogen | Carcinogen |

The material in general is not considered a carcinogen, however, all appropriate precautions should still be taken due to the presence of benzene in the product.

Key to Abbreviations

ACGIH® = American Conference of Governmental Industrial Hygienists.

A1 = Confirmed human carcinogen.

Reproductive Toxicity

Development of Offspring

Material in general is not expected to cause harm. The material in general is not expected to produce teratogenic or embryotoxic effects. Conclusions cannot be drawn from the limited studies available.

Sexual Function and Fertility

Material in general is not expected to cause harm. The material in general is not expected to have toxic reproductive effects. Not known to cause effects on sexual function or fertility.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Material in general is not expected to cause harm. The material in general is not expected to produce mutagenic effects. Not known to be a mutagen.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life, animals, birds.

Persistence and Degradability

No ingredient of this product or its degradation products is known to be highly persistent.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

If released into the environment, this product is expected to move slowly through the soil, based on physical and chemical properties. Contamination of groundwater could occur. If released into soil, this material will absorb and may biodegrade in anaerobic conditions. In water it may become volatile. Photo-oxidation products may include phenol, nitrophenols, nitrobenzene, formic acid.

Other Adverse Effects

There is no information available.

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Material Disposal:

This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water. Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Local Legislation:

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14. TRANSPORT INFORMATION

| Regulation | UN No. | Proper Shipping Name | Transport Hazard Class(es) | Packing Group |
|--------------|--------|----------------------|----------------------------|---------------|
| Canadian TDG | 1267 | PETROLEUM CRUDE OIL | 3 | I |
| US DOT | 1267 | PETROLEUM CRUDE OIL | 3 | I |

Environmental Hazards Marine Pollutant

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Emergency Response Guide No. GUIDE 128

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

This section is not required by WHMIS 2015.

SECTION 16. OTHER INFORMATION

NFPA Rating Health - 3 Flammability - 3 Instability - 0

SDS Prepared By Maxxam Analytics
Phone No. 1-800-386-7247

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Revision Indicators Not applicable

Key to Abbreviations ACGIH® = American Conference of Governmental Industrial Hygienists
OSHA = US Occupational Safety and Health Administration
RTECS® = Registry of Toxic Effects of Chemical Substances

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References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).

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SDS representative sample(s) :

ConocoPhillips SHD Crude Oil