



# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Sulfolane - A Anhydrous

**Product Use:** Solvent

**Product Number(s):** 0001024637, 0001024634, 0001024640, 0001024641, 0001024639, 0001098522, 0001024642, 0001024644, 0001024645, 0001029234, 0001070704, 0001024643, 0001024638, 0001024635, 0001093880, 0001024636

**Synonyms:** Tetramethylene Sulfone; Sulfolane Anhydrous; Tetrahydrothiophene 1,1-dioxide

**Product CAS No.:** 126-33-0

**Company Identification:**

Chevron Phillips Chemical Company LP  
Specialty Chemicals  
10001 Six Pines Drive  
The Woodlands TX 77380

**Product Information:**

MSDS Requests: (800) 852 - 5530  
Technical Information: (832) 813 - 4862  
Responsible Party: Product Safety Group  
Email:msds@cpchem.com

Chevron Phillips Chemicals International N.V.  
Brusselsesteenweg 355  
B-3090 Overijse  
Belgium

**24-Hour Emergency Telephone Numbers:** HEALTH:Chevron Phillips Emergency Information Center 866.442.9628 (North America) and 1.832.813.4984 (International)

**TRANSPORTATION:** North America: CHEMTREC 800.424.9300 or 703.527.3887  
ASIA: +1.703.527.3887  
EUROPE: BIG .32.14.584545 (phone) or .32.14.583516 (telefax)  
SOUTH AMERICA SOS-Cotec Inside Brazil: 0800.111.767  
Outside Brazil: 55.19.3467.1600

## SECTION 2 HAZARDS IDENTIFICATION

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### EMERGENCY OVERVIEW

Clear liquid. Mild odor.

**NFPA RATINGS:** Health: 1 Flammability: 0 Reactivity: 0

### GHS Classification and Labeling:

Target organ toxicant (repeated exposure): Category 2.

Eye irritation: Category 2B.  
Reproductive toxicant: Category 2.  
Acute oral toxicant: Category 4.

**Signal Word:** Warning



**GHS Symbol:**

**Target Organ:** May cause damage to organs through prolonged or repeated exposure.

**Health Hazards:** Suspected of damaging fertility or the unborn child. Causes eye irritation. Harmful if swallowed.

**Precautionary Hazard - Prevention:** Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**Precautionary Hazard - Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**Precautionary Hazard - Disposal:** Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**EU Classification:**

**Risk Phrases:**

R63: Possible risk of harm to the unborn child.

R36: Irritating to eyes.

R22: Harmful if swallowed.

R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**Additional Hazards:**

MAY CAUSE DAMAGE TO:

- - - - KIDNEY

**Safety Phrases:**

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S25: Avoid contact with eyes.

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**IMMEDIATE HEALTH EFFECTS:**

**Eye:** Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision. Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response.

**Ingestion:** Not expected to be harmful if swallowed.

**Inhalation:** Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause severe respiratory irritation.

**DELAYED OR OTHER HEALTH EFFECTS:**

**Reproduction and Birth Defects:** Swallowing this material may cause adverse reproductive effects based on animal data.

**Target Organs:** Repeated ingestion of this material may cause damage to the following organ(s) based on animal data. - Kidney

See Section 11 for additional information. Risk depends on duration and level of exposure.

**SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS**

COMPONENT	CAS	AMOUNT	EINECS /	SYM	R-Phrases

	NUMBER		ELINCS		
Sulfolane	126-33-0	>= 99.0 % weight	204-783-1	Xn	R22
Related Materials		<= 1 % weight	NA	NA	NA

#### Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Related Materials	ACGIH	Not Established	NA	NA	NA
Sulfolane	ACGIH	Not Established	NA	NA	NA
Sulfolane	CPCHEM	.37 ppm	NA	NA	NA

### SECTION 4 FIRST AID MEASURES

**Eye:** Flush eyes with running water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

**Skin:** To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. Get medical attention if any symptoms develop.

**Ingestion:** If swallowed, do not induce vomiting. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

**Inhalation:** Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

### SECTION 5 FIRE FIGHTING MEASURES

#### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 1 Flammability: 0 Reactivity: 0

#### FLAMMABLE PROPERTIES:

**Flashpoint:** 166°C (330.8°F) (Cleveland Open Cup)

**Autoignition:** NDA

**Flammability (Explosive) Limits (% by volume in air):** Lower: NDA Upper: NDA

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

#### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form: Sulfur Oxides, Carbon Oxides

### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material. Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable

containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** U.S.A. regulations may require reporting spills of this material that could reach any surface waters. Report spills to local authorities and/or the National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL . REFER TO PRODUCT LABEL OR MANUFACTURERS TECHNICAL BULLETINS FOR THE PROPER USE AND HANDLING OF THIS MATERIAL .**

**Precautionary Measures:** Do not get in eyes. Do not taste or swallow. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**General Handling Information:** Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations, which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids, National Fire Protection Association (NFPA 77), Recommended Practice on Static Electricity' (liquids, powders and dusts), and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents' (liquids).

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### ENGINEERING CONTROLS:

Use in a well-ventilated area.

### PERSONAL PROTECTIVE EQUIPMENT:

**Eye/Face Protection:** Wear eye protection such as safety glasses, chemical goggles, or faceshields if engineering controls or work practices are not adequate to prevent eye contact.

**Skin Protection:** Wear impervious protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Users should determine acceptable performance characteristics of protective clothing. Consider physical requirements and other substances present when selecting protective clothing. Suggested materials for protective gloves include: Neoprene

**Respiratory Protection:** If exposure is anticipated to be greater than applicable exposure limits, wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material. Use the following elements for air-purifying respirators: Air-Purifying Respirator for Organic Vapors

Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:**

Component	Limit	TWA	STEL	Ceiling / Peak	Notation
Related Materials	ACGIH	Not Established	NA	NA	NA
Sulfolane	ACGIH	Not Established	NA	NA	NA
Sulfolane	CPCHEM	.37 ppm	NA	NA	NA

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance and Odor:** Clear liquid. Mild odor.

**Autoignition:** NDA

**Boiling Point:** 282°C (539.6°F) - 288°C (550.4°F)

**Density:** 1.264 g/ml @ 30 °C (86°F)

**Evaporation Rate:** <1

**Flammability (Explosive) Limits (% by volume in air):** Lower: NDA Upper: NDA

**Flashpoint:** 166°C (330.8°F) (Cleveland Open Cup)

**Freezing Point:** 26°C (78.8°F)

**Molecular Formula:** C<sub>4</sub>H<sub>8</sub>SO<sub>2</sub>

**Molecular Weight:** 119.84 g/mol

**Melting Point:** NDA

**Octanol / Water Partition Coefficient: log-Kow:** NDA

**pH:** NA

**Pour Point:** NDA

**Solubility (in water):** Appreciable

**Specific Gravity:** 1.264 @ 30 °C (86°F)

**Vapor Pressure:** 1.14 mmHg @ 37.8 °C (100°F)

**Vapor Density (AIR=1):** >3

**Viscosity:** NDA

**Percent Volatile:** 100 % volume

**SECTION 10 STABILITY AND REACTIVITY**

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions to Avoid:** No Data Available

**Incompatibility With Other Materials:** May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products:** Sulfur Oxides. Carbon Oxides.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**SECTION 11 TOXICOLOGICAL INFORMATION****IMMEDIATE HEALTH EFFECTS:**

**Acute Oral Toxicity:** Sulfolane: LD<sub>50</sub> / rat / >2000 mg/kg

**Acute Dermal Toxicity:** Sulfolane: LD<sub>50</sub> / rat / > 2000 mg/kg

**Acute Inhalation Toxicity:** Sulfolane: LC<sub>50</sub> / rat / > 12,000 mg/m<sup>3</sup> / 4 hour(s)

**Eye Irritation:** This material is irritating to the eyes.

**Skin Irritation:** Sulfolane: This material is not expected to be irritating to the skin.

**Sensitization:** Dermal - not a sensitizer

**ADDITIONAL TOXICOLOGY INFORMATION:**

This product contains SULFOLANE:

Repeated Dose Toxicity: 28 days / oral / rat / 0, 60, 200, 700 mg/kg/day gavage / LOAEL = 200 mg/kg/day (males - kidney changes; altered blood chemistry increases in cholinesterase and total bilirubin, decreases in chloride), LOAEL - 700mg/kg (females - reduced locomotor activity; altered blood chemistry -decreases in glucose, increases in GPT); 27-90 days / inhalation of SULFOLANE AEROSOL / rat, monkey, dog / LOAEL > 200mg/m<sup>3</sup> / day (all species - convulsions, vomiting, increased aggression)

Reproductive and Developmental Toxicity: 49 days (males), 41-50 days (females) / oral gavage / rat / Doses: 0, 60, 200, or 700 mg/kg/ daily / NOAEL = 700 mg/kg/day (male), LOAEL = 200 mg/kg/day (decreased birth index and number of pups); 41-50 days (dams exposed 14 days prior to mating to day 3 of lactation) oral / rat / Doses: 0, 60, 200, 700mg/kg/day / NOAEL > 700mg/kg

Genetic Toxicity: Ames test - negative; Mouse Lymphoma Forward Mutational Assay - negative; in vitro Sister Chromatid Exchange assay - Negative

**SECTION 12 ECOLOGICAL INFORMATION****ECOTOXICITY:**

This material is not expected to be harmful to aquatic organisms.

Sulfolane - 96 hour(s) / LC50 / Orange killifish (*Oryzias latipes*) / > 100 mg/l

Sulfolane - 96 hour(s) / LC50 / rainbow trout (*Salmo gairdneri*) / > 1000 mg/l

Sulfolane - 48 hour(s) / EC50 / water flea (*Daphnia magna*) / 852 mg/l

Sulfolane - 72 hour(s) / EC50 / green algae (*Selenastrum capricornutum*) / > 1000 mg/l

**ENVIRONMENTAL FATE:**

Biodegradability: 14 day(s) / 10 %

This material is expected to be ultimately biodegradable.

**SECTION 13 DISPOSAL CONSIDERATIONS**

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

**SECTION 14 TRANSPORT INFORMATION**

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition). Consult the appropriate domestic or international mode- specific and quantity- specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

**Shipping Descriptions per regulatory authority.****US DOT**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION

**ICAO / IATA**

UN3334, AVIATION REGULATED LIQUID, N.O.S., (Sulfolane Anhydrous), 9

**IMO / IMDG**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION

**RID / ADR**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION

**Additional Information:** This material is regulated when shipped by AIR.**SECTION 15 REGULATORY INFORMATION****SARA 311/312 CATEGORIES:**

- |                                       |     |
|---------------------------------------|-----|
| 1. Immediate (Acute) Health Effects:  | YES |
| 2. Delayed (Chronic) Health Effects:  | YES |
| 3. Fire Hazard:                       | NO  |
| 4. Sudden Release of Pressure Hazard: | NO  |
| 5. Reactivity Hazard:                 | NO  |

**REGULATORY LISTS SEARCHED:**

01 = CA Prop 65	17 = FDA 178	33 = -
02 = LA RTK	18 = FDA 179	34 = -
03 = MA RTK	19 = FDA 180	35 = -
04 = MN Hazardous Substance	20 = FDA 181	36 = -
05 = NJ RTK	21 = FDA 182	37 = SARA Section 302
06 = PA RTK	22 = FDA 184	38 = SARA Section 313
07 = -	23 = FDA 186	39 = TSCA 12 (b)
08 = -	24 = FDA 189	40 = TSCA Section 4
09 = CWA Section 311	25 = IARC Group 1	41 = TSCA Section 5(a)
10 = DOT Marine Pollutant	26 = IARC Group 2A	42 = TSCA Section 8(a) CAIR
11 = FDA 172	27 = IARC Group 2B	43 = TSCA Section 8(a) PAIR
12 = FDA 173	28 = IARC Group 3	44 = TSCA Section 8(d)
13 = FDA 174	29 = IARC Group 4	45 = WHIMS - IDL
14 = FDA 175	30 = NTP Carcinogen	46 = Germany D TAL
15 = FDA 176	31 = OSHA Carcinogen	47 = Germany WKG
16 = FDA 177	32 = OSHA Highly Hazardous	48 = DEA List 1
		49 = DEA List 2

**The following components of this material are found on the regulatory lists indicated.**

Sulfolane 3, 6

**WHMIS CLASSIFICATION:**

Class D, Division 2, Subdivision A: Very Toxic Material  
 Chronic Toxic Effects  
 Reproductive Toxicity  
 Class D, Division 2, Subdivision B: Toxic Material  
 Chronic Toxic Effects  
 Skin or Eye Irritation

**CHEMICAL INVENTORY LISTINGS:**

<b>AUSTRALIA</b>	YES (AUS)
<b>CANADA</b>	YES (DSL)
<b>CHINA</b>	YES (IECSC)
<b>EUROPEAN UNION</b>	YES (EINECS)
<b>JAPAN</b>	YES (ENCS)
<b>KOREA</b>	YES (ECL)
<b>PHILIPPINES</b>	YES (PICCS)
<b>UNITED STATES</b>	YES (TSCA)

**EU LABELING:****Symbols:**

Xn - Harmful

**Risk and Safety Phrases:**

R63: Possible risk of harm to the unborn child.

R36: Irritating to eyes.

R22: Harmful if swallowed.

R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S25: Avoid contact with eyes.

**SECTION 16 OTHER INFORMATION****NFPA RATINGS:** Health: 1 Flammability: 0 Reactivity: 0 Special: NA

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA).

**REVISION STATEMENT:** The following sections have been updated:14**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

TLV	- Threshold Limit Value	TWA	- Time Weighted Average
STEL	- Short-term Exposure Limit	PEL	- Permissible Exposure Limit
ACGIH	- American Conference of Government Industrial Hygienists	OSHA	- Occupational Safety & Health Administration
NIOSH	- National Institute for Occupational Safety & Health	NFPA	- National Fire Protection Agency
WHMIS	- Workplace Hazardous Materials Information System	IARC	- Intl. Agency for Research on Cancer
EINECS	- European Inventory of existing Commercial Chemical Substances	RCRA	- Resource Conservation Recovery Act
SARA	- Superfund Amendments and Reauthorization Act.	TSCA	- Toxic Substance Control Act
EC50	- Effective Concentration	LC50	- Lethal Concentration
LD50	- Lethal Dose	CAS	- Chemical Abstract Service
NDA	- No Data Available	NA	- Not Applicable
<=	- Less Than or Equal To	>=	- Greater Than or Equal To
CNS	- Central Nervous System	MAK	- Germany Maximum Concentration Values

**This data sheet is prepared according to the latest adaptation of the EEC Guideline 67/548.**



This data sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This data sheet is prepared according to the ANSI MSDS Standard (Z400.1).

This data sheet was prepared by EHS Product Stewardship Group, Chevron Phillips Chemical Company LP, 10001 Six Pines Drive, The Woodlands, TX 77380.

This data sheet is prepared according to the Globally Harmonized System (GHS).

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.