SAFETY DATA SHEET

ETHANE PROPANE MIXTURE

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

Product information
Product Name: ETHANE PROPANE MIXTURE
Material: 1012531, 1012527

Company: Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:
Health: 866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887 (int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department: Product Safety and Toxicology Group
E-mail address: SDS@CPChem.com
Website: www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification: Flammable gases, Category 1
Gases under pressure, Liquefied gas

Labeling
Symbol(s):

SDS Number: 100000002557
SAFETY DATA SHEET

ETHANE PROPANE MIXTURE

Version 1.2

Signal Word: Danger

Hazard Statements:
- H220: Extremely flammable gas.
- H280: Contains gas under pressure; may explode if heated.

Precautionary Statements:
- **Prevention:**
  - P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- **Response:**
  - P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
  - P381: Eliminate all ignition sources if safe to do so.
- **Storage:**
  - P410 + P403: Protect from sunlight. Store in a well-ventilated place.

**Carcinogenicity:**

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

**Molecular formula:** Mixture

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
<td>70 - 90</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
<td>0 - 4</td>
</tr>
<tr>
<td>Methane</td>
<td>74-82-8</td>
<td>0 - 1.5</td>
</tr>
<tr>
<td>Propylene</td>
<td>115-07-1</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Butanes</td>
<td></td>
<td>0 - 1</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

**General advice:** Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

**If inhaled:** If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

**In case of eye contact:** Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

**If swallowed:** Induce vomiting immediately and call a physician. Take victim immediately to hospital. Keep respiratory tract clear. If symptoms persist, call a physician.
SECTION 5: Firefighting measures

- **Flash point**: -134 °C (-209 °F)
- **Suitable extinguishing media**: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.
- **Unsuitable extinguishing media**: High volume water jet.
- **Special protective equipment for fire-fighters**: Wear self-contained breathing apparatus for firefighting if necessary.
- **Further information**: For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- **Fire and explosion protection**: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

- **Personal precautions**: 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 areas.
- **Environmental precautions**: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 7: Handling and storage

**Handling**

- **Advice on safe handling**: For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
- **Advice on protection against fire and explosion**: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

**Storage**

- **Requirements for storage areas and containers**: Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>US</th>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane</td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>1,000 ppm, 1,800 mg/m³</td>
<td>(b),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>1,000 ppm, 1,800 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene</td>
<td>ACGIH</td>
<td>TWA</td>
<td>200 ppm,</td>
<td>asphyxia, A4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 ppm,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) The value in mg/m³ is approximate.
A4 Not classifiable as a human carcinogen
asphyxia Asphyxia
URT irr Upper Respiratory Tract irritation

Immediately Dangerous to Life or Health Concentrations (IDLH)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>Immediately Dangerous to Life or Health</td>
<td>1995-03-01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concentration Value</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2100 ppm</td>
<td></td>
</tr>
</tbody>
</table>

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace 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.

Personal protective equipment

**Respiratory protection**: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: 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.

**Hand protection**: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Eye protection**: Eye wash bottle with pure water. Safety glasses.

**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: Flame retardant antistatic protective clothing. Workers should wear antistatic
Hygiene measures: Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance
Form: Liquefied gas
Physical state: Gaseous
Color: Colorless
Odor: Slight

Safety data
Flash point: -134 °C (-209 °F)
Ignition temperature: 472 °C (882 °F)
Lower explosion limit: 2.9 %(V)
Upper explosion limit: 13 %(V)
Molecular formula: Mixture
Molecular weight: Not applicable
pH: Not applicable
Melting point/range: No data available
Freezing point: -183 °C (-297 °F)
Pour point: No data available
Boiling point/boiling range: -88 °C (-126 °F)
Vapor pressure: 620.00 PSiabs at 37.8 °C (100.0 °F)
Water solubility: Partly soluble

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.

Possibility of hazardous reactions
Conditions to avoid: Heat, flames and sparks.
SECTION 11: Toxicological information

ETHANE PROPANE MIXTURE
Acute oral toxicity : No data available

ETHANE PROPANE MIXTURE
Acute inhalation toxicity : No adverse effect has been observed in acute toxicity tests. Information refers to the main ingredient.

ETHANE PROPANE MIXTURE
Acute dermal toxicity : No data available

ETHANE PROPANE MIXTURE
Skin irritation : No skin irritation
Contact with liquid or refrigerated gas can cause cold burns and frostbite.

ETHANE PROPANE MIXTURE
Eye irritation : No eye irritation
Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Sensitization
Propylene : No data available.

Repeated dose toxicity
Ethane : Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 1600, 5000, 16000 ppm
Exposure time: 6 weeks
Number of exposures: 6 hours/day, 7 days/week
NOEL: 16000 ppm
Test substance: yes
Method: OECD Guideline 422

Propane
Species: Monkey
Application Route: Inhalation
Dose: 0, 750 ppm
Exposure time: 90 day
Number of exposures: daily
NOEL: > 750 ppm

Propylene
Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 625,1250,2500,5000, 10000 ppm
Exposure time: 14 wk
Number of exposures: 6 Hr/d, 5 d/wk
NOEL: 10000 ppm
No adverse effect has been observed in chronic toxicity tests.

Other data : No decomposition if stored and applied as directed.
Species: Mouse, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 625,1250,2500,5000, 10000 ppm  
Exposure time: 14 wk  
Number of exposures: 6 Hr/d, 5 d/wk  
NOEL: 10000 ppm  
No adverse effect has been observed in chronic toxicity tests.

Species: Rat, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 0, 5000, 10000 ppm  
Exposure time: 103 wk  
Number of exposures: 6 Hr/d, 5 d/wk  
Lowest observable effect level: 5000 ppm

Species: Mouse, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 0, 5000, 10000 ppm  
Exposure time: 103 wk  
Number of exposures: 6 Hr/d, 5 d/wk  
Lowest observable effect level: 5000 ppm

ETHANE PROPANE MIXTURE  
Carcinogenicity: Remarks: This information is not available.

ETHANE PROPANE MIXTURE  
Reproductive toxicity: This information is not available.

ETHANE PROPANE MIXTURE  
Developmental Toxicity: This information is not available.

CMR effects  
Propylene: Carcinogenicity: Animal testing did not show any carcinogenic effects.  
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Teratogenicity: Animal testing did not show any effects on fetal development.  
Reproductive toxicity: Animal testing did not show any effects on fertility.

ETHANE PROPANE MIXTURE  
Further information: No data available.

SECTION 12: Ecological information

Ecotoxicity effects  
Toxicity to fish: No data available
Elimination information (persistence and degradability)

Bioaccumulation: This material is not expected to bioaccumulate. This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Biodegradability: This material is volatile and is expected to partition to air.

Ecotoxicology Assessment

Results of PBT assessment
Propane: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Additional ecological information: No data available

SECTION 13: Disposal considerations

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

Product: Do not dispose of waste into sewer. 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. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

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 SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (ETHANE, PROPANE), 2.1

SDS Number:100000002557 8/12
SAFETY DATA SHEET
ETHANE PROPANE MIXTURE

Version 1.2
Revision Date 2017-12-18

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (ETHANE, PROPANE), 2.1, (-134 °C)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (ETHANE, PROPANE), 2.1

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (ETHANE, PROPANE), 2.1, (B/D)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., 2.1 (13)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1965, HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (ETHANE, PROPANE), 2.1

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Gases under pressure

CERCLA Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.
1,3-Butadiene

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.
SAFETY DATA SHEET
ETHANE PROPANE MIXTURE

Version 1.2
Revision Date 2017-12-18

SARA 313 Ingredients: The following components are subject to reporting levels established by SARA Title III, Section 313:

- Ethylene - 74-85-1
- Propylene - 115-07-1

Clean Air Act

Ozone-Depletion Potential: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

- Ethane - 74-84-0
- Propane - 74-98-6
- Ethylene - 74-85-1
- Methane - 74-82-8
- Propylene - 115-07-1

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

- Ethylene - 74-85-1
- Propylene - 115-07-1

US State Regulations

Pennsylvania Right To Know

- Ethane - 74-84-0
- Propane - 74-98-6
- Ethylene - 74-85-1
- Methane - 74-82-8
- Propylene - 115-07-1
- 1,3-Butadiene - 106-99-0

Pennsylvania Right To Know

- Ethane - 74-84-0
- Propane - 74-98-6
- Ethylene - 74-85-1
- Methane - 74-82-8
- Propylene - 115-07-1
- 1,3-Butadiene - 106-99-0
California Prop. 65: WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Notification status

Europe REACH: Not in compliance with the inventory
United States of America (USA) TSCA: On the inventory, or in compliance with the inventory
Canada DSL: On the inventory, or in compliance with the inventory
Australia AICS: On the inventory, or in compliance with the inventory
New Zealand NZIoC: On the inventory, or in compliance with the inventory
Japan ENCS: On the inventory, or in compliance with the inventory
Korea KECI: On the inventory, or in compliance with the inventory
Philippines PICCS: On the inventory, or in compliance with the inventory
China IECSC: On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification: Health Hazard: 2
Fire Hazard: 4
Reactivity Hazard: 0

Further information

Legacy SDS Number: 1849

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Key or legend</th>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
<td></td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
<td></td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
<td></td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic</td>
<td></td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
<td></td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
<td></td>
</tr>
<tr>
<td>Substances List</td>
<td>Safety &amp; Health</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>CNS Central Nervous System</td>
<td>NTP National Toxicology Program</td>
<td></td>
</tr>
<tr>
<td>CAS Chemical Abstract Service</td>
<td>NZIoC New Zealand Inventory of Chemicals</td>
<td></td>
</tr>
<tr>
<td>EC50 Effective Concentration</td>
<td>NOAEL No Observable Adverse Effect Level</td>
<td></td>
</tr>
<tr>
<td>EC50 Effective Concentration 50%</td>
<td>NOEC No Observed Effect Concentration</td>
<td></td>
</tr>
<tr>
<td>EGEST EOSCA Generic Exposure Scenario Tool</td>
<td>OSHA Occupational Safety &amp; Health Administration</td>
<td></td>
</tr>
<tr>
<td>EOSCA European Oilfield Specialty Chemicals Association</td>
<td>PEL Permissible Exposure Limit</td>
<td></td>
</tr>
<tr>
<td>EINECS European Inventory of Existing Chemical Substances</td>
<td>PICCS Philippines Inventory of Commercial Chemical Substances</td>
<td></td>
</tr>
<tr>
<td>MAK Germany Maximum Concentration Values</td>
<td>PRNT Presumed Not Toxic</td>
<td></td>
</tr>
<tr>
<td>GHS Globally Harmonized System</td>
<td>RCRA Resource Conservation Recovery Act</td>
<td></td>
</tr>
<tr>
<td>IC50 Inhibition Concentration 50%</td>
<td>SARA Superfund Amendments and Reauthorization Act</td>
<td></td>
</tr>
<tr>
<td>IARC International Agency for Research on Cancer</td>
<td>TLV Threshold Limit Value</td>
<td></td>
</tr>
<tr>
<td>IECSC Inventory of Existing Chemical Substances in China</td>
<td>TWA Time Weighted Average</td>
<td></td>
</tr>
<tr>
<td>ENCS Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA Toxic Substance Control Act</td>
<td></td>
</tr>
<tr>
<td>KECI Korea, Existing Chemical Inventory</td>
<td>UVCB Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
<td></td>
</tr>
<tr>
<td>&lt;= Less Than or Equal To</td>
<td>WHMIS Workplace Hazardous Materials Information System</td>
<td></td>
</tr>
<tr>
<td>LC50 Lethal Concentration 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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