

Section 1: Identification

1.1. Product identifier

Product form : Mixture
 Product Identifier(s) : Propane (Refinery Grade)
 LPG
 Liquefied Petroleum Gas
 Refinery Grade Propane
 DEC3 Overhead
 DC3 Overhead
 Hydrocarbons, C3
 CAS No : 68606-26-8

1.2. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Fuel
 Industrial use resulting in manufacture of another substance (use of intermediates)

1.3. Details of the supplier of the safety data sheet

Total Petrochemicals & Refining USA, Inc.
 P O Box 674411
 Houston, TX 77267-4411

For non-emergency product information:
 Phone: 713-483-5000
 Email: product.stewardship@total.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (Toll Free USA & Canada) / 703-527-3887 (Multiple languages)
 Total Petrochemicals & Refining USA, Inc.: 1-800-322-3462 (Language: English only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Simple Asphyxiant
 Flammable gases Category 1
 Gases under pressure Compressed gas
 Specific target organ toxicity (single exposure) Category 3 - Narcotic effects

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: **Danger**

Hazard statements (GHS-US)

: **Extremely flammable gas**
Contains gas under pressure; may explode if heated
May cause drowsiness or dizziness
May displace oxygen and cause rapid suffocation

Precautionary statements (GHS-US)

: Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
 Avoid breathing gas, mist, spray, vapors.
 Use only outdoors or in a well-ventilated area.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 Call doctor, poison center if you feel unwell.
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 Eliminate all ignition sources if safe to do so.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
 Protect from sunlight. Store in a well-ventilated place.

Propane (Refinery Grade)

Safety Data Sheet

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

2.3. Hazards not otherwise classified

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

2.5. Additional information

Based on conditions common to industrial workplace use of this product : Contact with the liquefied gas may cause frostbite.

Based on professional judgment, inconclusive testing, or sensitive individuals : May cause mild eye irritation.
May cause mild respiratory irritation.

Section 3: Composition/Information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Where concentrations in this product are displayed as ranges, it is due to batch-to-batch variability.

Name	CAS No	%
Propane	74-98-6	>= 90
Isobutane (Impurity)	75-28-5	<= 8
Butane (Impurity)	106-97-8	<= 3
Propylene (Impurity)	115-07-1	<= 2
Ethane (Impurity)	74-84-0	<= 1

Section 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice. If breathing stops, give artificial respiration.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause drowsiness or dizziness. Significant inhalation may cause symptoms similar to oxygen deprivation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Carbon dioxide. Water spray. Dry chemical.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the chemical

Fire hazard : Extremely flammable gas.

Explosion hazard : May form flammable/explosive vapor-air mixture. The vapors are denser than air and may travel along the ground. Distance ignition possible.

5.3. Advice for firefighters

Firefighting instructions : In case of fire: Stop leak if safe to do so. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Propane (Refinery Grade)

Safety Data Sheet

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Complete protective clothing. Self-contained breathing apparatus.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Emergency procedures for non-emergency personnel : Evacuate unnecessary personnel.

Emergency procedures for emergency responders : Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Ventilate area.

6.2. Methods and material for containment and cleaning up

For containment : Stop leak, if possible without risk.

6.3. Reference to other sections

See section 8. Exposure controls/personal protection.

Section 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. Flammable gas.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing gas, mist, spray, vapors. Use only outdoors or in a well-ventilated area. Explosion-proof electrical equipment and grounded lighting.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : flames, heat sources, sparks, sunlight. Keep in fireproof place. Keep container tightly closed.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

Storage area : Store in a well-ventilated place.

Section 8: Exposure controls/personal protection

8.1. Occupational Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV, or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Propane (74-98-6)		
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Propylene (115-07-1)		
USA ACGIH	ACGIH TWA (ppm)	500 ppm
Butane (106-97-8)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
Isobutane (75-28-5)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear fire/flamm resistant/retardant clothing.

Respiratory protection : Wear appropriate respiratory protection, if occupational exposure limits are exceeded or irritation/sensitivity is experienced.

Other information : Do not eat, drink or smoke during use.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Clear, colorless gas.

Color : Colorless.

Propane (Refinery Grade)

Safety Data Sheet

Odor	: Characteristic.
Odor threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: -185 (-185.2 - -184.3) °C
Freezing point	: No data available
Boiling point	: -48 °C
Flash point	: < -56 °C (closed cup)
Auto-ignition temperature	: 455 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Vapor pressure	: 10201 hPa (at 20 °C)
Relative vapor density at 20 °C	: 1.5 Air = 1
Relative density	: 0.5
Specific gravity / density	: 0.51 g/cm³ (at 20 °C)
Solubility	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 2.1 - 9.5 vol %
9.2. Other information	
VOC content	: 100 %
Gas group	: Compressed gas
Additional information	: Liquid under pressure

Section 10: Stability and reactivity

10.1. Reactivity

Unstable at high temperatures and pressures. Extremely flammable gas.

10.2. Chemical stability

Extremely flammable gas. Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases. Oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: carbon monoxide, carbon dioxide, toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Ingestion. Inhalation. Skin and eye contact.

Acute toxicity : Not classified

Combustion of hydrocarbon substances, like this product, produces potentially toxic gases which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur. Exposure to carbon monoxide gas decreases the ability of the blood to carry oxygen to the body and may be potentially fatal. NIOSH lists the Immediately Dangerous to Life or Health Concentration (IDLH) for carbon monoxide gas as 1200 ppm.

Propane (74-98-6)	
LC50 inhalation rat (ppm)	382000 ppmV/4h (based on butane study)
Propylene (115-07-1)	
LD50 oral rat	Not an expected route of exposure.

Propane (Refinery Grade)

Safety Data Sheet

LC50 inhalation rat (ppm)	382000 ppm/4h
---------------------------	---------------

Ethane (74-84-0)	
LC50 inhalation rat (ppm)	534000 ppmV/4h based on butane study

Butane (106-97-8)	
LD50 oral rat	Oral exposure is not an expected route of exposure.
LD50 dermal rabbit	3000 mg/kg based on n-pentane
LC50 inhalation rat (ppm)	258000 ppmV/4h

Isobutane (75-28-5)	
LD50 oral rat	Not expected to be relevant route of exposure.
LD50 dermal rabbit	3000 mg/kg based on n-pentane
LC50 inhalation rat (ppm)	258000 ppmV/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Propane (74-98-6)	
National Toxicology Program (NTP) Status	Not listed

Propylene (115-07-1)	
IARC group	3 - Not classifiable
National Toxicology Program (NTP) Status	Not listed

Ethane (74-84-0)	
National Toxicology Program (NTP) Status	Not listed

Butane (106-97-8)	
National Toxicology Program (NTP) Status	Not listed

Isobutane (75-28-5)	
National Toxicology Program (NTP) Status	Not listed

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Section 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Propylene is a ozone precursor in the lower atmosphere.

Other information : Avoid release to the environment.

Section 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

Propane (Refinery Grade)

Safety Data Sheet

Section 14: Transport information

US Transport (DOT) for Bulk Shipments (Non-Bulk Shipments May Differ)

Transport document description : UN1978, Propane, 2.1
UN or NA Number : UN1978
Proper Shipping Name : Propane
Primary Hazard Class : 2.1 - Flammable gas
Hazard labels :



Emergency Response Guide (ERG) Number : 115

Transport by sea (IMDG)

Transport document description : UN1978, PROPANE, 2.1
UN Number : UN1978
Proper Shipping Name : Propane
Primary Hazard Class : 2.1 - Flammable gases
Hazard labels (IMDG) :



Air transport (IATA)

Transport document description : UN1978, Propane, 2.1
UN Number : UN1978
Proper Shipping Name : Propane
Primary Hazard Class : 2.1 - Flammable gas
Hazard labels (IATA) :



Section 15: Regulatory information

15.1. US Federal regulations

EPA TSCA Status

All components of this product are listed or excluded from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

SARA Section 313 Supplier Notification

This product contains the following toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

CAS number	Chemical name	Concentration
115-07-1	Propylene	<= 2%

This information must be included in all Safety Data Sheets that are copied and distributed for this product. For additional information, see 40 CFR §372.45 Notification About Toxic Chemicals.

SARA Section 311/312 Hazard Classes : Acute health hazard
Fire hazard
Sudden release of pressure hazard

Export Control Classification Number (ECCN): EAR99 (No License Required)

Propane (Refinery Grade)

Safety Data Sheet

15.2. International regulations

CANADA

Propane (Refinery Grade) (68606-26-8)

WHMIS Classification

Class A - Compressed Gas
Class B Division 1 - Flammable Gas

National inventories

No additional information available

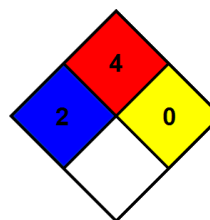
15.3. US State regulations

California Proposition 65 - To the best of our knowledge, there are no Proposition 65 chemicals present in this product at levels that would require warning under the California Safe Drinking Water and Toxic Enforcement Act

Section 16: Other information

NFPA (National Fire Protection Association)

NFPA health hazard : 2
NFPA fire hazard : 4
NFPA reactivity : 0



HMIS III Rating

Health : 2
Flammability : 4
Physical Hazard : 0
Personal protection : See section 8 of SDS

US OSHA LABEL as specified under 29 CFR §1910.1200 (f)

Propane (Refinery Grade)

Total Petrochemicals & Refining USA, Inc.
PO Box 674411
Houston, TX 77267-4411 USA
Tel. 713-483-5000



Danger

Extremely flammable gas

Contains gas under pressure; may explode if heated

May cause drowsiness or dizziness

May displace oxygen and cause rapid suffocation

Keep away from heat, hot surfaces, open flames, sparks. - No smoking.

Avoid breathing gas, mist, spray, vapors.

Use only outdoors or in a well-ventilated area.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Call doctor, poison center if you feel unwell.

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Eliminate all ignition sources if safe to do so.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight. Store in a well-ventilated place.

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

Version : 1.3

Date of issue : July 13, 2016

MSDS ID: PROPANE_REF_GRADE

Date of issue: 07/13/2016

EN (English US)

7/8

Propane (Refinery Grade)

Safety Data Sheet

SDS REFERENCE NUMBER: RF0066

SDS Template - TOTAL SDS US (GHS HazCom 2012) TPRI Version 5.00

The information contained in this Safety Data Sheet (SDS) is believed by Total Petrochemicals & Refining USA, Inc. (TPRI) to be accurate on the date issued. However, materials may present unknown hazards and should be used with caution. Final determination of suitability and use of any material is the sole responsibility of the user. Neither TPRI nor any of its subsidiaries or affiliated companies assumes any liability whatsoever for the accuracy or completeness of the information contained herein or reliance thereto. If the material is repackaged, the user is responsible and must ensure that proper health, safety and other necessary information is included with the material and/or on the container. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING THE MATERIALS OR THE INFORMATION CONTAINED IN THIS SDS. ALTERATION OF THIS DOCUMENT IS STRICTLY PROHIBITED.