FLINT HILLS resources®

SAFETY DATA SHEET

1. Identification

Product identifier **PROPYLENE (POLYMER GRADE)**

Other means of identification

SDS number 21803

Synonym(s) PROPENE

Recommended use This product is intended for use as a chemical industry feedstock, fuel, or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

Recommended restrictions Not assigned.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Flint Hills Resources Houston Chemical, LLC
9822 La Porte Fwy
Houston, TX
77017
United States

Telephone numbers – 24 hour emergency assistance

Chemtrec 800-424-9300
FHR Houston Chemical, LLC 713-740-3911

Telephone numbers – general assistance

8-5 (M-F, CST) Customer Service 281-363-7200
8-5 (M-F, CST) MSDS Assistance 316-828-7988
Email: msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards	Flammable gases	Category 1
	Gases under pressure	Liquefied gas
Health hazards	Not classified.	
OSHA defined hazards	Simple asphyxiants	Classified

Label elements

Signal word Danger

Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.

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

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

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

Disposal Not available.

Hazard(s) not otherwise classified (HNOC) Not classified.

3. Composition/information on ingredients

Substances

Hazardous components

Chemical name	Common name and synonyms	CAS number	%
PROPYLENE	PROPENE	115-07-1	100

Composition comments

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

4. First-aid measures

Inhalation

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR).

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin contact

For frostbite or freeze burns, keep affected area warm by immersing or flushing with warm water. GET IMMEDIATE MEDICAL ATTENTION.

Eye contact

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

Ingestion

Due to the volatile nature of this material, ingestion is not a likely route of exposure.

Most important symptoms/effects, acute and delayed

INHALATION:
Asphyxiant gas. High concentrations in the immediate area can displace oxygen causing the feeling of suffocation and can cause central nervous system depression from oxygen deprivation.

SKIN:
Direct contact with compressed gas may cause frostbite (cold burns) and skin damage.

EYES:
Direct contact with compressed gas may cause eye damage.

INGESTION:
Not a normal route of exposure.

Indication of immediate medical attention and special treatment needed

INHALATION: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation, as required.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Use water spray, dry chemical or carbon dioxide to extinguish fire.

Unsuitable extinguishing media

Do not direct water at spill or source of leak.

Specific hazards arising from the chemical

Combustion may produce CO, CO2, and other decomposition products in the case of incomplete combustion.

Material will burn in a fire.

Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back.

Explosion hazard if exposed to extreme heat.

Special protective equipment and precautions for firefighters

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Fire-fighting equipment/instructions

Shut off source of flow, if possible. Do not attempt to extinguish fire if gas source cannot be shut off first.

Evacuate area and fight fire from a safe distance.

If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor, cool adjacent structures, and to protect personnel attempting to stop a leak.

Containers can build up pressure if exposed to heat (fire). Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire. Always stay away from tanks engulfed in flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. For spills in confined areas, ensure adequate ventilation. For spills outdoors, stay upwind. IF TANK, RAILCAR OR TANK TRUCK IS INVOLVED IN A FIRE, isolate for 1600 meters (1 mile) in all directions. Evacuate area endangered by release as required. Wear appropriate personal protective equipment. See Exposure Controls/Personal Protection (Section 8).

Methods and materials for containment and cleaning up

Keep unnecessary people away. Isolate area for at least 100 meters (300 feet) in all directions to preserve public safety. For large spills, if downwind consider initial evacuation for at least 800 meters (1/2 mile).

Keep ignition sources out of area and shut off all ignition sources. Use water spray to reduce vapors. For leaks in confined areas, ensure adequate ventilation. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

Environmental precautions

If material is released to the environment, take immediate steps to stop release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required. Notify local authorities and National Response Center, if required.

7. Handling and storage

Precautions for safe handling

Bond and ground lines and equipment (tank, transfer lines, pump, floats, etc.) used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not use electronic devices while handling, unless the device is certified as intrinsically safe as they could present ignition sources.

Avoid contact with strong oxidizers. Avoid release to the environment. Do not cut, grind, drill, weld (or introduce any other ignition source) on empty containers. Do not reuse containers unless adequate precautions are taken.

Contents under pressure. Containers and delivery lines may be cold enough to present frostbite hazards. Gas can accumulate in confined spaces and limit oxygen availability for breathing. Use adequate ventilation.

Avoid personal contact with this material. Always observe good personal hygiene measures, such as removing contaminated clothing and protective equipment, washing after handling the material and before entering public areas. Restrict eating, drinking and smoking to designated areas to prevent personal chemical contamination. Routinely wash work clothing and protective equipment to remove contaminants. Do not breathe gas.

Conditions for safe storage, including any incompatibilities

Store in gas cylinders in cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers. Empty containers may contain material residue. Do not reuse without adequate precautions.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
PROPYLENE (CAS 115-07-1)	TWA	500 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Consider the following when employing engineering controls and selecting personal protective equipment: potential hazards of the material, applicable exposure limits, job activities, and other substances in the work place. Explosion-proof ventilation and other forms of engineering controls are the preferred means for controlling exposures below occupational exposure limits and guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection	Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.
Hand protection	Avoid skin contact with this material. Use chemical resistant gloves when handling this material. Contact the glove manufacturer for specific advice on glove selection regarding permeability and breakthrough times for your use conditions. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Wear cold insulating gloves.
Other	Avoid skin contact with this material. Additional protective clothing may be necessary.
Respiratory protection	If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used. Use a supplied air respirator. Material may displace oxygen. Ensure that sufficient oxygen is present.
Thermal hazards	Direct contact with compressed gas may cause frostbite (cold burns) and permanent damage. Wear appropriate thermal protective clothing. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield, or boots.

9. Physical and chemical properties

Appearance

Physical state	Gas.
Form	Gas at room temperature and pressure; liquid under pressure
Color	Colorless
Odor	Unpleasant, petroleum-like
Odor threshold	Not available.
pH	Not applicable
Melting point	Not available.
Initial boiling point and boiling range	-54.4 °F (-48 °C)
Flash point	-162 °F (-107.8 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable gas

Upper/lower flammability or explosive limits

Explosive limit - lower (%)	2 %
Explosive limit - upper (%)	11.1 %
Vapor pressure	10.0 atm (68 °F (20 °C))
Vapor density	1.49 @ 1atm (68 °F (20 °C))
Relative density	Not applicable
Solubility(ies)	45 %
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	851 °F (455 °C)
Decomposition temperature	Not available.
Viscosity	Not applicable

Other information

Critical temperature	197.24 °F (91.8 °C)
Molecular weight	42.08

10. Stability and reactivity

Reactivity	See statements below.

Chemical stability	Material is stable under normal conditions. Instability caused by elevated temperatures and pressures.
Possibility of hazardous reactions	Not anticipated under normal conditions.
Conditions to avoid	Avoid unventilated areas, heat, open flames, sparks and ungrounded electrical equipment.
Incompatible materials	Incompatible with strong oxidizers. See precautions under Handling & Storage (Section 7).
Hazardous decomposition products	Not anticipated under normal conditions.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Not a likely route of exposure
Inhalation	Likely route of exposure
Skin contact	Likely route of exposure
Eye contact	Likely route of exposure

Symptoms related to the physical, chemical and toxicological characteristics

INHALATION:
Asphyxiant gas. High concentrations in the immediate area can displace oxygen causing the feeling of suffocation and can cause central nervous system depression from oxygen deprivation.

SKIN:
Direct contact with compressed gas may cause frostbite (cold burns) and skin damage.

EYES:
Direct contact with compressed gas may cause eye damage.

INGESTION:
Not a normal route of exposure.

Information on toxicological effects

Acute toxicity Not classified.

Product	Species	Test Results
PROPYLENE (CAS 115-07-1)		
Acute		
Inhalation		
NOAEC	Rat	10000 ppm, 14 days

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

ACGIH Carcinogens

PROPYLENE (CAS 115-07-1)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

PROPYLENE (CAS 115-07-1)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration toxicity	Not classified.

Toxicological data

PROPYLENE: At extremely high levels propylene gas acts as a general anesthetic and central nervous system depressant. Studies in laboratory animals indicate evidence of mild, reversible hydrocarbon nephropathy in male rats exposed to levels of 1000-4,500 ppm propylene for 90-days. The International Agency for Research in Cancer (IARC) has determined that there is inadequate evidence in experimental animals for the carcinogenicity of propylene. Overall evaluation: Propylene is not classifiable as to its carcinogenicity to humans (Group 3).

12. Ecological information

Ecotoxicity Material not classified as harmful to aquatic organisms. Petroleum and refinery gases readily volatilize and evaporate into air, and would not be expected to persist in the aquatic environment for a long enough duration to cause toxic effects.

Persistence and degradability Readily biodegradable in the environment.

Bioaccumulative potential Not likely to bioaccumulate in aquatic organisms.

Mobility in soil After release, disperses into the air.

Other adverse effects No other adverse effects expected.

13. Disposal considerations

Disposal instructions This material, as supplied, when discarded or disposed of, may be a hazardous waste according to Federal regulations (40 CFR 261).

The transportation, storage, treatment and disposal of waste material must be conducted in compliance with federal, state, and local regulations. Under RCRA it is the responsibility of the user of the material to determine, at the time of disposal, whether this material meets RCRA criteria for hazardous waste. For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

Hazardous waste code The proper waste code must be evaluated at the time of disposal and should be determined by the user and waste disposal company.

Waste from residues / unused products Dispose of this material in accordance with all applicable local and national regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with government regulations. Packaging may contain residue that can be hazardous.

14. Transport information

DOT

UN number	UN1075
UN proper shipping name	Petroleum Gases, Liquefied
Transport hazard class(es)	2.1
Subsidiary class(es)	Not available.
Packing group	NA
Special precautions for user	Not available.
Labels required	Flammable Gas
Placards required	Flammable Gas, UN1075

IATA

UN number	UN1077
UN proper shipping name	Propylene
Transport hazard class(es)	2.1
Subsidiary class(es)	-
Packaging group	Not available.
Environmental hazards	No
Labels required	Not available.
ERG Code	10L

IMDG

UN number	UN1077
UN proper shipping name	PROPYLENE
Transport hazard class(es)	2.1
Subsidiary class(es)	-
Packaging group	Not available.
Environmental hazards	
Marine pollutant	No
Labels required	Not available.
EmS	F-D, S-U

Special precautions for user Stowage and Segregation, Category E.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

General information BILL OF LADING - BULK (U. S. DOT): UN1075, Petroleum Gases, Liquefied, 2.1

BILL OF LADING - NON-BULK (U. S. DOT): UN1075, Petroleum Gases, Liquefied, 2.1

U.S. DOT NOTES: Note 1:UN1075, Petroleum Gases, Liquified is for domestic transportation only.

The following language shall be added to the proper shipping description for liquefied petroleum gas:

The words "NONCORROSIVE" or "NONCOR" to indicate the suitability for shipping "NONCORROSIVE" liquefied petroleum gas in a cargo tank made of quenched and tempered steel as authorized by 49 CFR 173.315(a); or

The words "NOT FOR Q AND T TANKS" for grades of liquefied petroleum gas other than "Noncorrosive".

The above description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

DOT

IATA; IMDG

15. Regulatory information

US federal regulations All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

This material contains toxic chemical(s) in excess of the applicable de minimis concentration that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372). This information must be included in all SDSs that are copied and distributed for this material.

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

PROPYLENE (CAS 115-07-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

PROPYLENE (CAS 115-07-1) Listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

PROPYLENE (CAS 115-07-1) LISTED

US CERCLA Hazardous Substances: Reportable quantity

PROPYLENE (CAS 115-07-1) 100 LBS

US EPCRA (SARA Title III) Section 304 - Extremely Hazardous Spill: Reportable quantity

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - Yes

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

PROPYLENE (CAS 115-07-1)

US. California Proposition 65

Based on available information this product does not contain any components or chemicals currently known to the State of California to cause cancer, birth defects or reproductive harm at levels which would be subject to Proposition 65. Reformulation, use or processing of this material may affect its composition and require re-evaluation.

16. Other information, including date of preparation or last revision

Issue date	07-15-2014
Revision date	08-30-2019
Version #	01
Further information	Not available.
HMIS® ratings	Health: 1 Flammability: 4 Physical hazard: 1
NFPA ratings	Health: 1 Flammability: 4 Instability: 1
Disclaimer	THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS.
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