Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Product identifier

Product Name **Propylene**

Synonyms Propene, Methylethylene

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) Chemical reclamation

Details of the supplier of the safety data sheet

Manufacturer

Westlake Chemical OpCo LP
900 Highway 108
Sulphur, LA 70665
United States
www.westlake.com

Telephone (General) 270-395-3151

Emergency telephone number

800-424-9300 – CHEMTREC

Section 2: Hazards Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012

- Flammable Gases 1 - H220
  Liquefied Gas - H280
  Simple Asphyxiant

Label elements

OSHA HCS 2012

Hazard statements

- **DANGER**

Extremely flammable gas - H220
Contains gas under pressure; may explode if heated - H280
May displace oxygen and cause rapid suffocation.

Precautionary Statements

Prevention

- Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking. - P210

Response

- Leaking gas fire: Do not extinguish, unless leak can be stopped safely. - P377
- Eliminate all ignition sources if safe to do so. - P381

Storage/ Disposal

- Protect from sunlight. Store in a well-ventilated place. - P410+P403

Other hazards

OSHA HCS 2012

- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

Classification of the substance or mixture

WHMIS

- Compressed Gas - A
  Flammable Gases - B1

Label elements

WHMIS

- Compressed Gas - A
  Flammable Gases - B1

Other hazards

WHMIS

- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.
- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

Substances

Composition				
Chemical Name	**Identifiers (CAS)**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**
Propene	115-07-1	< 97%	NDA	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Liq.; Simp. Asphyx.
Propane	74-98-6	< 3%	NDA	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Liq.; Simp. Asphyx.;

Mixtures

- Material does not meet the criteria of a mixture.

Section 4 - First Aid Measures

Description of first aid measures

Inhalation

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.

Skin

- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has not occurred, immediately and thoroughly wash contaminated skin with soap and water.

Eye

- If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Ingestion

- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

Extinguishing media

Suitable Extinguishing Media

- SMALL FIRES: Dry chemical or CO2.
- LARGE FIRES: Water spray or fog.

Unsuitable Extinguishing Media

- NDA

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- EXTREMELY FLAMMABLE
- Will form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

Hazardous Combustion Products

- NDA

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations
- ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED
- Move containers from fire area if you can do it without risk.
- FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
- FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.
- FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.
- FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.
- FIRE INVOLVING TANKS: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

Personal Precautions

- Ventilate the area before entry. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Keep out of low areas. Stay upwind.
- LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile)

Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
- All equipment used when handling the product must be grounded.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.
- Do not direct water at spill or source of leak.
- Isolate area until gas has dispersed.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Keep away from heat and ignition sources – No Smoking.
- Use only with adequate ventilation. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposure to a fatal concentration of this material could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency.
- Take precautionary measures against static charges.
- Use only non-sparking tools.
- All equipment used when handling the product must be grounded. Wear appropriate personal protective equipment, avoid direct contact.

Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Propane (74-98-6)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA; 1800 mg/m3 TWA	1000 ppm TWA; 1800 mg/m3 TWA
Propene (115-07-1)	TWAs	500 ppm TWA	Not established	Not established

Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof - electrical, ventilating and/or lighting equipment.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear appropriate gloves.

Environmental Exposure Controls	• Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15 minute exposures
TWA = Time Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	**Appearance/Description**	Clear, colorless gas with a mild olefin odor. Liquid under pressure.
Color	Clear, colorless	**Odor**	Mild olefin odor.
Odor Threshold	NDA		
General Properties			
Boiling Point	NDA	**Melting Point**	-185 C(-301 F)
Decomposition Temperature	NDA	**pH**	NDA
Specific Gravity/Relative Density	NDA	**Water Solubility**	Slightly Soluble
Viscosity	NDA		
Volatility			
Vapor Pressure	10 atm @ 20 C(68 F)	**Vapor Density**	1.4 Air=1
Evaporation Rate	NDA	**Volatiles (Wt.)**	100%
Volatiles (Vol.)	100%		
Flammability			
Flash Point	108 C(226.4 F)	**UEL**	11.1 %
LEL	2 %	**Autoignition**	480 C(896 F)
Flammability (solid, gas)	NDA		
Environmental			
Octanol/Water Partition coefficient	NDA		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat, sparks, open flame.

Incompatible materials

- Reacts vigorously with oxidizing agents. With nitrogen dioxide, extremely unstable nitrogen compounds are formed.

Hazardous decomposition products

- Carbon monoxide, carbon dioxide and small amounts of aromatic and aliphatic hydrocarbons

Section 11 - Toxicological Information

Information on toxicological effects

GHS Properties	Classification
Acute toxicity	**OSHA HCS 2012**•NDA
Aspiration Hazard	**OSHA HCS 2012**•NDA
Carcinogenicity	**OSHA HCS 2012**• Carcinogenicity 1A
Germ Cell Mutagenicity	**OSHA HCS 2012**• Germ Cell Mutagenicity 1B
Skin corrosion/Irritation	**OSHA HCS 2012**•NDA
Skin sensitization	**OSHA HCS 2012**•NDA
STOT-RE	**OSHA HCS 2012**•NDA
STOT-SE	**OSHA HCS 2012**•NDA
Toxicity for Reproduction	**OSHA HCS 2012**•NDA
Respiratory sensitization	**OSHA HCS 2012**•NDA
Serious eye damage/Irritation	**OSHA HCS 2012**•NDA

Potential Health Effects
Inhalation

Acute (Immediate)
- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. If this material is released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with decreased levels of oxygen: increase in breathing and pulse rate, emotional upset, abnormal fatigue, nausea, vomiting, collapse, loss of consciousness, convulsive movements, respiratory collapse and death.

Chronic (Delayed)
- NDA

Skin

Acute (Immediate)
- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.

Chronic (Delayed)
- NDA

Eye

Acute (Immediate)
- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.

Chronic (Delayed)
- NDA

Ingestion

Acute (Immediate)
- Ingestion can cause burns similar to frostbite.

Chronic (Delayed)
- NDA

Key to abbreviations

LD = Lethal Dose

MLD = Mild

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

Toxicity

- NDA

Persistence and degradability

- NDA

Bioaccumulative potential

- NDA

Mobility in Soil

- NDA

Other adverse effects

- NDA

Section 13 - Disposal Considerations

Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN1077	Propylene	2.1	NDA	NDA
TDG	UN1077	PROPYLENE	2.1	NDA	NDA
IMO/ IMDG	UN1077	PROPYLENE	2.1	NDA	NDA
IATA/ ICAO	UN1077	Propylene	2.1	NDA	NDA

Special precautions for user
- None specified

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

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute, Fire, Pressure(Sudden Release of)

Inventories
- These products comply with the following inventories:

Canada DSL/NDSL **USA TSCA**

CERCLA
- In the event of a spill, the end user should verify whether reporting is required under local, state, and/or federal regulations.

WHIMS Classification
- The following components have classifications
  - Propane (CAS 74-98-6) is classified as A, B1
  - Propene (CAS 115-07-1) is classified as A, B1

Section 16 - Other Information

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Preparation Date 01/April/2015

Disclaimer/Statement of Liability

It is your responsibility to determine that our product is safe, lawful, and technically suitable for your intended uses. This safety data sheet cannot cover all possible situations which the user may experience during processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this safety data sheet should be provided to employees and/or customers. Westlake Chemical OpCo LP must rely on the user to use this information to develop appropriate work practice guidelines and employee instructional programs specific to the user's operation.

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NDA = No data available