



Safety Data Sheet

Section 1: Identification

Product identifier

Product Name	• Propane Odorized
Synonyms	• Liquefied Petroleum Gas; Odorized Propane; Propane HD-5
CAS Number	• 74-98-6
SDS Number/Grade	• 0013NOR001
Molecular Formula	• CH ₃ CH ₂ CH ₃

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

Recommended use	• Consult manufacturer for the recommended product use
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Details of the supplier of the safety data sheet

Manufacturer	• Northern Tier Energy 301 St. Paul Park Road St. Paul Park, MN 55071 United States www.ntenergy.com
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Telephone (General) • 651-459-9771

Emergency telephone number

Chemtrec	• 800-424-9300
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Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012	• Flammable Gases 1 Liquefied Gas Simple Asphyxiant
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Label elements

OSHA HCS 2012

DANGER



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

Precautionary statements

Prevention • Keep away from heat, sparks, open flames and/or 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/Disposal • Protect from sunlight. Store in a well-ventilated place.

Other hazards

- OSHA HCS 2012**
- 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. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients**Substances**

- Material does not meet the criteria of a substance.

Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Propane	CAS:74-98-6	90% TO 100%	NDA	OSHA HCS 2012: Flam. Gas 1; Press. Gas - Liq.; Simp. Asphyx.;	NDA
Propene [0% TO 5%]	CAS:115-07-1	0% TO 5%	NDA	OSHA HCS 2012: Flam. Gas 1; Press. Gas;	NDA
Ethane [0.5% TO 3%]	CAS:74-84-0	0.45% TO 3%	NDA	OSHA HCS 2012: Flam. Gas 1; Press Gas - Comp., Simp. Asphyx.;	NDA

Ethaneithiol [0.0014775% TO 0.0025%]	CAS:75- 08-1	0.00132975% TO 0.0025%	Ingestion/Oral-Rat LD50 • 682 mg/kg Inhalation-Rat LC50 • 4420 ppm 4 Hour(s)	OSHA HCS 2012: Exposure Limits	NDA
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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. If signs/symptoms continue, get medical attention.
- 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. If irritation, pain, swelling, lacrimation or photophobia persist, get medical attention as soon as possible.
- 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: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media**
- SMALL FIRES: Dry chemical or CO₂.
LARGE FIRES: Water spray or fog.

- Unsuitable Extinguishing Media**
- No data available

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**
- No data available

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. Stop leak if you can do it without risk. 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

- All equipment used when handling the product must be grounded. Stop leak if you can do it without risk. 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

- Use only with adequate ventilation. Keep away from heat and ignition sources – No Smoking. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Use only non-sparking tools. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Cylinders should be firmly secured to prevent falling or being knocked-over. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing gas. Avoid contact with skin, eyes, and clothing. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

Conditions for safe storage, including any incompatibilities

Storage

- Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Protect cylinders against physical damage. Cylinders should be firmly secured to prevent falling or being knocked-over.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Propene (115-07-1)	TWAs	500 ppm TWA	Not established	Not established
Ethanethiol (75-08-1)	Ceilings	Not established	0.5 ppm Ceiling (15 min); 1.3 mg/m ³ Ceiling (15 min)	10 ppm Ceiling; 25 mg/m ³ Ceiling
	TWAs	0.5 ppm TWA	Not established	Not established
Ethane (74-84-0)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	Not established	Not established
Propane (74-98-6)	TWAs	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)	1000 ppm TWA; 1800 mg/m ³ TWA	1000 ppm TWA; 1800 mg/m ³ TWA

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

- Use atmosphere supplying respirators in the event of oxygen deficiency, when material produces vapors that exceed permissible limits or when excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 1910.134.

Eye/Face

- Wear safety glasses.

Skin/Body

- Wear insulated gloves to prevent skin contact and frostbite.

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

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	A colorless liquefied gas with rotten-egg odor.
Color	Colorless	Odor	Rotten-egg odor.
Odor Threshold	No data available		
General Properties			
Boiling Point	-43.7 F(-42.0556 C)	Melting Point/Freezing Point	-305.8 F(-187.6667 C)
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	= 0.51 Water=1	Density	4.4 lbs/gal @ 32 F(0 C)
Water Solubility	Moderately soluble 1 to 10 %	Viscosity	No data available

Volatility			
Vapor Pressure	7600 mmHg (torr)	Vapor Density	1.56 Air=1
Evaporation Rate	No data available		
Flammability			
Flash Point	-156 F(-104.4444 C)	UEL	9.5 %
LEL	2.1 %	Autoignition	871 F(466.1111 C)
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

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

- Excessive heat, sources of ignition and open flames.

Incompatible materials

- Strong oxidizers such as nitrates, perchlorates, chlorine, fluorine.

Hazardous decomposition products

- Carbon monoxide.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Propane (90% TO 100%)	74-98-6	Acute Toxicity: Inhalation-Rat LC50 • >800000 ppm 15 Minute(s); Behavioral:General anesthetic; Behavioral:Ataxia; Lungs, Thorax, or Respiration:Respiratory depression

GHS Properties	Classification
Respiratory sensitization	OSHA HCS 2012 • No data available
Serious eye damage/Irritation	OSHA HCS 2012 • No data available
Acute toxicity	OSHA HCS 2012 • No data available
Aspiration Hazard	OSHA HCS 2012 • No data available
Carcinogenicity	OSHA HCS 2012 • No data available
Skin corrosion/Irritation	OSHA HCS 2012 • No data available
Skin sensitization	OSHA HCS 2012 • No data available
STOT-RE	OSHA HCS 2012 • No data available
STOT-SE	OSHA HCS 2012 • No data available

Toxicity for Reproduction	OSHA HCS 2012 • No data available
Germ Cell Mutagenicity	OSHA HCS 2012 • No data available

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)

- No data available

Skin

Acute (Immediate)

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

Chronic (Delayed)

- No data available

Eye

Acute (Immediate)

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

Chronic (Delayed)

- No data available

Ingestion

Acute (Immediate)

- Ingestion can cause burns similar to frostbite.

Chronic (Delayed)

- No data available

Key to abbreviations

LC = Lethal Concentration

Section 12 - Ecological Information

Toxicity

- Non-mandatory section - information about this substance not compiled for this reason.

Persistence and degradability

- Non-mandatory section - information about this substance not compiled for this reason.

Bioaccumulative potential

- Non-mandatory section - information about this substance not compiled for this reason.

Mobility in Soil

- Non-mandatory section - information about this substance not compiled for this reason.

Other adverse effects

- Non-mandatory section - information about this substance not compiled for this reason.

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	UN1978	Propane	2.1	NDA	NDA
TDG	UN1978	PROPANE	2.1	NDA	NDA

- Special precautions for user**
- Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
- No data available

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)

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Ethane	74-84-0	Yes	No	Yes
Ethanethiol	75-08-1	Yes	No	Yes
Propane	74-98-6	Yes	No	Yes
Propene	115-07-1	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

- | | | |
|---------------|----------|-------|
| • Propane | 74-98-6 | A, B1 |
| • Ethane | 74-84-0 | A, B1 |
| • Ethanethiol | 75-08-1 | B2 |
| • Propene | 115-07-1 | A, B1 |

Canada - WHMIS - Ingredient Disclosure List

- | | | |
|---------------|----------|------------|
| • Propane | 74-98-6 | Not Listed |
| • Ethane | 74-84-0 | Not Listed |
| • Ethanethiol | 75-08-1 | 1 % |
| • Propene | 115-07-1 | Not Listed |

Environment

Canada - CEPA - Priority Substances List

- | | | |
|-----------|---------|------------|
| • Propane | 74-98-6 | Not Listed |
|-----------|---------|------------|

• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed

• Propene	115-07-1	1.0 % de minimis concentration
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Propane	74-98-6	Not Listed
• Ethane	74-84-0	Not Listed
• Ethanethiol	75-08-1	Not Listed
• Propene	115-07-1	Not Listed

Section 16 - Other Information

Revision Date	• 02/November/2015
Preparation Date	• 30/November/2010

Disclaimer/Statement of Liability

- The information and recommendations contained herein are based upon tests believed to be reliable. However, Northern Tier Energy does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. Northern Tier Energy assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

Key to abbreviations

NDA = No Data Available
