

Section 1. Identification

Kiva Energy
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Transportation Emergency (PERS)

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Technical Information

1(800)845-5426

Product Name: PROPANE **SDS no.** 6182

Common Name: Propane, Liquefied Petroleum Gas; LP Gas; HD-5 Propane; HD-10 Propane; Commercial Propane, Unodorized Propane, Odorized Propane. **Revision Date:** 4/1/2015

Chemical Name : Dimethylmethane **Chemical Formula:** C3H8

Chemical Family: Paraffin Hydrocarbons

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

Not Available

Section 2. Hazards Identification

OSHA/HCS Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or GHS label elements FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Compressed gas



Hazard pictograms:

Signal word: Danger

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

Precautionary statements

General: If medical advice is needed, have product container or label at hand.

Prevention: Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/clothing and eye/face protection. Use personal protective equipment as required.

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

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

Disposal: Not applicable.

Hazards not otherwise classified: Not known.

National Fire Protection Association (U.S.A)

Health: 2

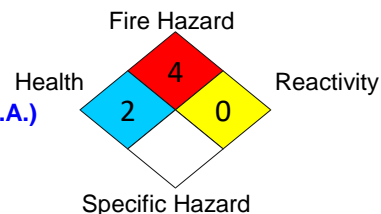
Flammability: 4

Instability: 0

Hazardous Material Information System (U.S.A)

Health	1
Fire hazard	4
Physical hazards:	2
Personal protection	

National Fire Protection Association (U.S.A.)



Section 3. Composition/Information on Ingredients

Substance/mixture Mixture
 Chemical name Dimethylmethane
 Other means of identification HD-5 Propane; HD-10 Propane; Commercial Propane, Unodorized Propane, Odorized Propane.

Ingredient Name	%	Cas Number
Propane	90-100	74-98-6
Ethyl Mercaptan	<0.1	75-08-1
Potential Impurities		
Propene; Propylene	0 - 10	115-07-1
Butanes (n-Butane and iso-Butane)	0 - 5	106-97-8, 75-28-5
Ethane	0 - 8	74-84-0

Odorized products contain small quantities of ethyl mercaptan as an olfactory indicator.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First Aid Measures

Description of necessary first aid measures

Eye Contact In case of liquid contact with eyes, flush eyes immediately with clear water for at least 15 minutes, occasionally lifting the upper and lower lids, until no evidence of chemical remains. Remove contact lenses if present and easy to do. Seek immediate medical attention.

Inhalation If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If breathing difficulties develop, oxygen should be administered by qualified personnel. If victim is not breathing, clear airway and immediately begin artificial respiration. Seek immediate medical attention.

Skin Contact Frozen tissue should be flushed with plenty of tepid water. Do not use hot water. In case of blistering, frostbite, or freeze burns, seek immediate medical attention.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with cool water. Seek medical attention.

Most important symptoms/effects, acute and delayed
Potential acute health effects

Eye contact	Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	The substance may cause effects on the central nervous system.
Skin Contact	Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion	As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact	Propane exhibits some degree of anesthetic action and is mildly irritating to the mucous membranes.
Inhalation	At high concentrations propane acts as a simple asphyxiant without other significant physiological effects. High concentrations may cause death due to oxygen depletion. Dizziness; confusion;
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting Measures

Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire. Do not extinguish gas fire unless the gas leak can be stopped.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The gas is heavier than air and may flash back at a distance.

Hazardous thermal decomposition products Decomposition products may include the following materials
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas.

Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Methods and materials for containment and cleaning up

Spill Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.

Advice on general occupational hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use.

Section 8. Exposure Controls/Personal Protection

Control Parameters

Occupational exposure limits

Ingredients Name	Exposure Limits
Propane	NIOSH REL (United States, 4/2013). TWA: 1800 mg/m ³ 10 hours.. TWA: 1000 ppm 10 hours
Propene	OSHA PEL (United States, 2/2013). TWA: 1800 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours. ACGIH TLV (United States, 3/2012). TWA: 500 ppm 8 hours.

Appropriate engineering controls Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin Protection

Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and Chemical Properties

<u>Appearance</u>			
Physical State	Gas. [(liquid under pressure).]	Relative density	0.5
Color	Colorless	Evaporation rate	Not available
Odor	If odorized, will have rotten egg odor, otherwise	Solubility	Not available
Odor threshold	Not Available	Solubility in water	Very Slighty Soluble
PH	Not available	Partition coefficient: n-octanol/water	Not available
Melting point	Not available	Auto-ignition temperature	467.778°C (874°F)
Boiling point	-42.222°C (-44°F)	Decomposition temperature	Not available
Flash Point	Closed cup: -104.444°C (-156°F)	SADT	Not available
Flammability	Not available	Viscosity	Not available

Lower and upper explosive
(flammable) limits

Lower: 2.1%
Upper: 9.5%

Vapor Pressure

190 psia @ 100°F

Vapor Density

1.5 [Air= 1]

Section 10. Stability and Reactivity

Reactivity

No specific test data related to reactivity available for this product or its ingredients.

Chemical stability

The product is stable.

Possibility of hazardous reaction

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

Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials

Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

There is no data available

Irritation/Corrosion

Skin

There is no data available

Eyes

There is no data available

Respiratory

There is no data available

Sensitization

Skin

There is no data available

Respiratory

There is no data available

Mutagenicity

There is no data available

Carcinogenicity

There is no data available

Reproductive toxicity

There is no data available

Teratogenicity

There is no data available

Specific target organ toxicity (single exposure)

There is no data available

Aspiration hazard

There is no data available

Information on the likely routes of exposure

Dermal contact. Eye contact. Inhalation.

Section 12. Ecological Information

Toxicity

Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing

Persistence and degradability

Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapor phase in ambient air.

Bioaccumulative potential

Not expected to bioaccumulate.

Mobility in soil

Soil/water partition coefficient (K_{oc}) There is no data available

Other adverse effects Other environmental hazards cannot be excluded in the event of unprofessional handling or disposal.

Section 13. Disposal Considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport Information

DOT IDENTIFICATION NUMBER	UN1075	DOT proper shipping name	LIQUEFIED PETROLEUM GAS (Propane, Ethane)
DOT Hazard Class(es)	2.1	PG	Not applicable. DOT EMER. RESPONSE GUIDE NO. 115

Section 15. Regulatory Information

U.S. Federal regulations **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Air Act (CAA) 112 regulated flammable substances:
Propane; Propene; Ethane; Isobutane; Butane

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure

Composition/information on ingredients

No products were found.

SARA 313 This product (does/not) contain toxic chemicals subject to the reporting requirements of SARA Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

Product Name	CAS Number	%
Propene	115-07-1	0-10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts The following components are listed: Propane; Propene; Ethane; Isobutane; Butane

New York None of the components are listed.

New Jersey The following components are listed: Propane; Propene; Ethane; Isobutane; Butane

Pennsylvania The following components are listed: Propane; Propene; Ethane; Isobutane; Butane

California Prop. 65 No products were found.

Section 15. Regulatory Information

Revision date 4/21/2015
Revised Section(s) All

Supersedes 2/23/2010

Notice to reader

THE INFORMATION CONTAINED IN THIS SDS RELATES ONLY TO THE SPECIFIC MATERIAL IDENTIFIED. IT DOES NOT COVER USE OF THAT MATERIAL IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PARTICULAR PROCESS. IN COMPLIANCE WITH 29 C.F.R. 1910.1200(g), KIVA ENERGY HAS PREPARED THIS SDS IN SEGMENTS, WITH THE INTENT THAT THOSE SEGMENTS BE READ TOGETHER AS A WHOLE WITHOUT TEXTUAL OMISSIONS OR ALTERATIONS. KIVA ENERGY BELIEVES THE INFORMATION CONTAINED HEREIN TO BE ACCURATE, BUT MAKES NO REPRESENTATION, GUARANTEE, OR WARRANTY, EXPRESS OR IMPLIED, ABOUT THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THE INFORMATION OR ABOUT THE FITNESS OF CONTENTS HEREIN FOR EITHER GENERAL OR PARTICULAR PURPOSES. PERSONS REVIEWING THIS SDS SHOULD MAKE THEIR OWN DETERMINATION AS TO THE MATERIAL'S SUITABILITY AND COMPLETENESS FOR USE IN THEIR PARTICULAR APPLICATIONS.