

Material Safety Data Sheet



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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

HD-5 PROPANE FUEL (ODORIZED)

COMPANY IDENTIFICATION

Dynegy Midstream Services,
Limited Partnership
1000 Louisiana, Suite 5800
Houston, Texas 77002

EMERGENCY TELEPHONE NUMBERS:

HEALTH (24 hr): (800) 231-0623

TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300

PRODUCT INFORMATION: (713)507-3998

2. COMPOSITION / INFORMATION ON INGREDIENTS

100.0 % HD-5 PROPANE FUEL (ODORIZED)

CONTAINING

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
PROPANE Chemical Name: PROPANE CAS74986	> 90.0%	Asphyxiant 1800 mg/m3	ACGIH TWA OSHA PEL
ETHANE Chemical Name: ETHANE CAS74840	< 10.0%	Asphyxiant	ACGIH TWA
HYDROCARBONS, C4 AND UP Chemical Name: HYDROCARBONS, C4 AND UP CAS68476448	< 2.5%	NONE	NA

Revision Number: 4 Revision Date: 9/12/2000 MSDS Number: 004919
NDA – No Data Available NA – Not Applicable

Prepared according to the OSHA Hazard Communication Standard
(29 CF 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology
and Health Risk Assessment Unit, CRTCL, P. O. Box 4054, Richmond, CA 94804

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
ETHYL MERCAPTAN Chemical Name: ETHYL MERCAPTAN CAS75081		0.5 ppm 25 mg/m3	ACGIH TWA OSHA PEL
RADON Chemical Name: RADON CAS14859677		NONE	NA

COMPOSITION COMMENT:

All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory. This material is classified as a simple asphyxiant. When working with this material, the minimal oxygen content should be 18 percent by volume under normal atmospheric pressure.

- | | |
|----------------------------------|--|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | TPQ - Threshold Planning Quantity |
| RQ - Reportable Quantity | PEL - Permissible Exposure Limit |
| C - Ceiling Limit | CAS - Chemical Abstract Service Number |
| A1-5 - Appendix A Categories | () - Change Has Been Proposed |

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

Colorless gas or liquid with distinct odor of commercial natural gas.

- EXTREMELY FLAMMABLE
- LIQUID CAN CAUSE EYE AND SKIN INJURY
- MAY EXCLUDE OXYGEN AVAILABLE FOR BREATHING
- DETECTION OF LEAK VIA SENSE OF SMELL MAY NOT BE POSSIBLE IF ODORANT HAS DEGRADED
- CONTENTS UNDER PRESSURE

POTENTIAL HEALTH EFFECTS

EYE:

The gas phase is not expected to cause eye irritation. However, the liquid can cause frostbite and burns. This hazard evaluation is based on the data from similar materials.

SKIN:

The gas is not irritating to the skin. However, skin contact with liquid or solid can cause severe frostbite or burns. The systemic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if it gets on the skin. This hazard evaluation is based on data from similar materials.

INGESTION:

Material is a gas and cannot usually be swallowed.

INHALATION:

This material can act as a simple asphyxiant by displacement of air. This hazard evaluation is based on data from similar materials.

SIGNS AND SYMPTOMS OF EXPOSURE**INHALATION:**

Signs and symptoms of the resultant central nervous system effects may include rapid breathing, incoordination, rapid fatigue, excessive salivation, disorientation, headache, nausea, and vomiting. Convulsions, loss of consciousness, coma and/or death may occur if exposure to high concentration continues.

4. FIRST AID MEASURES

EYE:

Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. See a doctor for further treatment as soon as possible.

SKIN:

Skin contact with the liquid may result in frostbite and burns. Soak contact area in tepid water to alleviate the immediate effects and get medical attention.

INGESTION:

Not expected to be an ingestion problem, no first aid procedures are required.

INHALATION:

If any signs or symptoms as described in this document occur, move the person to fresh air. If any of these effects continue, see a doctor.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: -156°F (-104°C)

AUTOIGNITION: 842°F (450C)

FLAMMABILITY LIMITS (% by volume in air): Lower: 2.1 Upper: 9.5

EXTINGUISHING MEDIA:

Stop flow of gas. CO2 for small fires. Water fog. Dry chemical or Halon.

NFPA RATINGS: Health 1; Flammability 4; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flashback.

COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300**ACCIDENTAL RELEASE MEASURES:**

Eliminate all sources of ignition in vicinity of spill or released vapor.

If this material is released into a work area, evacuate the area immediately. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions in the Exposure Controls/Personal Protection section. Allow to dissipate with adequate ventilation.

7. HANDLING AND STORAGE

This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

DO NOT USE OR STORE near flame, sparks or hot surfaces. **USE ONLY IN WELL VENTILATED AREA.** Keep container closed. Before entry into confined spaces that may have contained hazardous material, determine concentrations and take appropriate measures for personal protection. Material presents a hazard that may require personal protective equipment for entry. **CONTAINER UNDER PRESSURE.** Store away from strong oxidizing materials.

This product has been odorized in order to aid in its detection in case of a leak or accidental discharge. During shipping or storage of an odorized material, alteration of the odorant and subsequent reduction in its effectiveness may occur.

Odorants are reactive. Rust and scale in storage containers and pipes may significantly reduce an odorant's effectiveness. For this reason, storage containers must be free of rust and scale. Whenever an empty cylinder is filled, it must be properly purged and conditioned to remove air and water and to deactivate sites for oxidation of the odorant. Underground pipelines should also be checked periodically for leaks.

Prolonged exposure to an odorant or other strong smells in the environment may reduce an individual's ability to detect the odorant. People with an impaired ability to detect odors due to colds, allergies, smoking, injuries, etc., must be especially cautious.

Special precautions should be taken when entering or handling equipment in this type of gas service because of possible radioactive contamination. All equipment should be checked for radioactivity or opened to the atmosphere and have forced ventilation applied for at least four hours prior to entry or handling. Avoid direct skin contact with any surface. Avoid generation of dust, smoke, fumes, etc.

in the work area, or if they cannot be avoided, a tested and certified radionuclide dust respirator should be worn. Smoking, eating, or drinking, should be prohibited when working with the equipment. Employees should wash thoroughly with soap and water and discard contaminated clothing after entering or handling the equipment.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Use this material only in well ventilated areas.

PERSONAL PROTECTIVE EQUIPMENT**EYE/FACE PROTECTION:**

Appropriate eye protection must be worn when working with this material or serious harm can result. Wear chemical goggles or a face shield at all times.

SKIN PROTECTION:

Do not get on skin or on clothing. Wear protective clothing including gloves when handling.

RESPIRATORY PROTECTION:

No special respiratory protection is normally required.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Colorless gas or liquid with distinct odor of commercial natural gas.

pH:

NDA

VAPOR PRESSURE:

208 PSI @ 37.8°C (Max.)

VAPOR DENSITY (AIR=1):

1.6

BOILING POINT:

-44°F (-42°C)

FREEZING POINT:

-305°F

MELTING POINT:

NA

SOLUBILITY:

Soluble in alcohol, ether and hydrocarbons; insoluble in water.

SPECIFIC GRAVITY:

0.5 @ 15.6/15.6°C

EVAPORATION RATE:

NDA

PERCENT VOLATILE (VOL): 100%

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:

NDA

CHEMICAL STABILITY:

Stable.

CONDITIONS TO AVOID:

NDA

INCOMPATIBILITY WITH OTHER MATERIALS:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

HAZARDOUS POLYMERIZATION:

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

SKIN EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ACUTE ORAL EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ACUTE INHALATION EFFECTS:

No product toxicology data available. The hazard evaluation was based on data from similar materials.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains butane. An atmospheric concentration of 100,000 ppm (10%) butane is not noticeably irritating to the eyes, nose or respiratory tract, but will produce slight dizziness in a few minutes of exposure. No chronic systemic effect has been reported from occupational exposure.

This product contains isobutane. Isobutane has been shown to increase airway resistance by bronchioconstriction and decrease pulmonary compliance and tidal volume (difficulty in breathing). Air containing 27% isobutane was found to decrease respiratory rate and proved to be fatal to rats.

This product may contain detectable but varying quantities of the naturally occurring radioactive substance radon 222. The amount in the gas itself is not hazardous, but since radon rapidly decays ($t_{1/2} = 3.82$ days) to form other radioactive elements including lead 210, polonium 210, and bismuth 210, equipment may be radioactive. The radon daughters are solids and therefore may attach to dust particles or form films and sludges in equipment. Inhalation, ingestion or skin contact with radon daughters can lead to the deposition of radioactive material in the lungs, bone, blood forming organs, intestinal tract, kidney, and colon. Occupational exposure to radon and radon daughters has been associated with an increased risk of lung cancer in underground uranium miners. Refer to the Handling and Storage section in this document.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

This material is not expected to present an environmental problem.

ENVIRONMENTAL FATE:

NDA

13. DISPOSAL CONSIDERATIONS

This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by USEPA under RCRA (40CFR261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: Liquefied Petroleum Gas (Odorized)
 DOT HAZARD CLASS: 2.1 (FLAMMABLE GAS)
 DOT IDENTIFICATION NUMBER: UN1075

15. REGULATORY INFORMATION

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects:	YES
2. Delayed (Chronic) Health Effects:	NO
3. Fire Hazard:	YES
4. Sudden Release of Pressure Hazard:	YES
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	21=TSCA Sect 4(e)
02=MASS RTK	12=CERCLA 302.4	22=TSCA Sect 5(a)(2)
03=NTP Carcinogen	13=MN RTK	23=TSCA Sect 6
04=CA Prop 65-Carcin	14=ACGIH TWA	24=TSCA Sect 12(b)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	25=TSCA Sect 8(a)
06=IARC Group 1	16=ACGIH Calc TLV	26=TSCA Sect 8(d)
07=IARC Group 2A	17=OSHA PEL	27=TSCA Sect 4(a)
08=IARC Group 2B	18=DOT Marine Pollutant	28= OSHA CEILING
09=SARA 302/304	19= Canadian WHMIS	
10=PA RTK	20=EPA Carcinogen	

The following components of this material are found on the regulatory lists indicated.

RADON	is found on lists: 06,
ETHANE	is found on lists: 02, 10, 11, 13, 14,
PROPANE	is found on lists: 02, 10, 11, 13, 14, 17,
ETHYL MERCAPTAN	is found on lists: 02, 10, 11, 13, 14, 17, 19,

16. OTHER INFORMATION

NFPA RATINGS: Health 1; Flammability 4; Reactivity 0;(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:

Changes have been made throughout this Material Safety Data Sheet. Please read the entire document.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.