



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: PROPANE (WITH ODOR)
DEFSI MSDS NO: DEFSI003

THE FOLLOWING INFORMATION IS FURNISHED SUBJECT TO THE DISCLAIMER ON THE BOTTOM OF THIS FORM

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT
NAME: PROPANE (WITH ODOR)

MANUFACTURER/ DISTRIBUTOR:
DUKE ENERGY FIELD SERVICES
900 REPUBLIC PLAZA
370 17TH ST.
DENVER, CO 80202

SYNONYMS:
DIMETHYL METHANE
HD-5 PROPANE
LIQUEFIED PETROLEUM GAS
LP- GAS

EMERGENCY PHONE NUMBERS:
(303) 595-3351 (DEFSI)
(800) 424-9300 (CHEMTREC)

CHEMICAL FAMILY: ALIPHATIC HYDROCARBON
CHEMICAL FORMULA: $CH_3 CH_2 CH_3$

CAS NO: 74-98-6

SECTION 2 - PHYSICAL PROPERTIES

BOILING POINT
-40 F

MELTING POINT
N. A. F

SPECIFIC GRAVITY (H₂O= 1)
0.5077

% SOLUBILITY IN WATER
SLIGHT

VAPOR DENSITY (AIR=1)
1.5

VAPOR PRESSURE
mmHG @ 20 C.: 5,600

PH
N. A.

ODOR
MERCAPTAN

APPEARANCE
COLORLESS GAS

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT
-156 F

AUTOIGNITION TEMP
N. D. A. F

EXPLOSIVE LIMITS (% BY VOLUME IN AIR)
LOWER/UPPER 2.1/9.5

NFPA CLASSIFICATION:

HEALTH: 1 FIRE: 4

REACTIVITY: 0 OTHER:

EXTINGUISHING MEDIA:

CLASS B FIRE EXTINGUISHING MEDIA SUCH AS HALON, CO₂ OR DRY CHEMICAL CAN BE USED. FIRE FIGHTING SHOULD BE ATTEMPTED ONLY BY THOSE WHO ARE ADEQUATELY TRAINED.

SPECIAL FIRE FIGHTING PROCEDURES:

STOP THE FLOW OF GAS AND ALLOW FIRE TO BURN OUT. EXTINGUISHING THE FLAME BEFORE SHUTTING OFF THE SUPPLY CAN CAUSE THE FORMATION OF EXPLOSIVE MIXTURES. IN SOME CASES IT MAY BE PREFERRED TO ALLOW THE FLAME TO CONTINUE TO BURN. KEEP THE SURROUNDING AREA COOL WITH WATER SPRAY AND PREVENT FURTHER IGNITION OF COMBUSTIBLE MATERIAL.

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SECTION 3 - FIRE AND EXPLOSION HAZARD DATA (cont.)

STABILITY: THE MATERIAL IS STABLE
 CONDITIONS TO AVOID: SOURCES OF HEAT OR IGNITION

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE

INCOMPATIBLE MATERIALS: STRONG OXIDIZERS (E. G. CHLORINE), MINERAL ACIDS

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION 4 - PRODUCT COMPOSITION AND EXPOSURE LIMITS

CAS NO. (OSHA)	REL(NIOSH)	COMPONENTS:	PERCENT RANGE	TLV (ACGIH)	PEL
74-98-6	PROPANE	97 - 98	NE	1000 PPM**	1000 PPM
106-97-8	BUTANES	<1.5	NE	800 PPM*	800 PPM
115-07-1	PROPYLENE	<5	NE	NE	NE
75-08-1	ETHYL MERCAPTAN	<2	0.5	0.5 ***	

* 8HR TWA UNLESS OTHERWISE SPECIFIED
 ** FOR N-BUTANE
 *** PROPANE IS A SIMPLE ASPHYXIAN BY ACGIH STANDARDS.
 THE INTENSITY OF ETHYL MERCAPTAN STENCH (ITS ODOR) MAY VARY DUE TO CHEMICAL OXIDATION (IN THE PRESENCE OF RUST, AIR OR MOISTURE), ADSORPTION OR ABSORPTION. SOME PEOPLE HAVE NASAL PERCEPTION PROBLEMS AND MAY MASK OR HIDE THE ETHYL MERCAPTAN STENCH. WHILE ETHYL MERCAPTAN MAY NOT IMPART THE WARNING OF THE PRESENCE OF PROPANE IN EVERY INSTANCE, IT IS GENERALLY EFFECTIVE IN A MAJORITY OF SITUATIONS.

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SECTION 5 - POTENTIAL HEALTH EFFECTS

EYE:

PROPANE IS GENERALLY NON-IRRITATING TO EYES. PRESSURIZED GAS CAN CAUSE MECHANICAL INJURY TO THE EYE. LIQUEFIED GAS MAY CAUSE FREEZE BURNS UPON DIRECT CONTACT.

SKIN:

LIQUEFIED GAS MAY CAUSE FREEZE BURNS UPON DIRECT CONTACT.

INGESTION:

INGESTION NOT LIKELY

INHALATION:

SIMPLE ASPHYXIAN

ADDITIONAL TOXICITY INFORMATION:

EXTREME OVER EXPOSURE MAY PRODUCE DIZZINESS, HEADACHE, DISORIENTATION, EXCITATION, FATIGUE, INABILITY TO CONCENTRATE, VOMITING, COUGHING, ANESTHESIA, UNCONSCIOUSNESS AND DEATH.

EMERGENCY FIRST AID PROCEDURES

EYE:

IMMEDIATELY FLUSH EYES WITH RUNNING WATER FOR AT LEAST FIFTEEN MINUTES.
CALL A PHYSICIAN IF SYMPTOMS OR IRRITATION OCCUR.

SKIN:

IMMEDIATELY FLUSH SKIN WITH RUNNING WATER FOR AT LEAST FIFTEEN MINUTES.
CALL A PHYSICIAN IF SYMPTOMS OR IRRITATION OCCUR.

INHALATION:

MOVE PERSON TO FRESH AIR IF NOT BREATHING OR IF NO HEARTBEAT,
GIVE ARTIFICIAL RESPIRATION OR CARDIOPULMONARY RESUSCITATION.
IMMEDIATELY CALL PHYSICIAN.

INGESTION:

INGESTION NOT LIKELY.

SECTION 6 - SPECIAL PROTECTION INFORMATION

VENTILATION:

LOCAL OR GENERAL EXHAUST REQUIRED IF USED IN AN ENCLOSED AREA IN ORDER TO KEEP CONCENTRATIONS BELOW THE LOWER EXPLOSIVE LIMIT.

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SECTION 6 - SPECIAL PROTECTION INFORMATION (cont.)

RESPIRATORY:

USE ATMOSPHERE SUPPLIED RESPIRATORS IN THE EVENT OF OXYGEN DEFICIENCY.
SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED FOR FIRE FIGHTING.

USE A NIOSH / MSHA APPROVED SCBA.

EYE PROTECTION:

GOGGLES OR FACE SHIELD MAY BE NEEDED WHEN HANDLING PRESSURIZED GASES.

OTHER PROTECTIVE EQUIPMENT:

USE EXPLOSION-PROOF EQUIPMENT.

SECTION 7 - SPILL OR LEAK PROCEDURES

ENVIRONMENTAL EFFECTS:

MOST COMPONENTS OF PROPANE ARE HEAVIER THAN AIR AND WILL
STAY IN LOW LYING AREAS IF VENTILATION OR WIND IS NOT PRESENT.

STEPS TO BE TAKEN IN CASE OF SPILL, LEAK OR RELEASE:

KEEP PUBLIC AWAY. SHUT OFF SOURCE IF POSSIBLE TO DO SO WITHOUT HAZARD.
WEAR APPROPRIATE SAFETY EQUIPMENT IF CONDITIONS WARRANT. PROTECT
FROM IGNITION. VENTILATE AREA THOROUGHLY. ADVISE LOCAL AND STATE
EMERGENCY SERVICES AGENCIES, IF APPROPRIATE.

WASTE DISPOSAL METHOD:

PREFERRED METHOD OF DISPOSAL IS BURNING AS A VAPOR IN A PROPERLY
DESIGNED FLARE. SPECIAL CARE MUST BE TAKEN TO ENSURE COMPLETE
DISSIPATION OF PROPANE BELOW LOWER EXPLOSIVE LIMIT.

SECTION 8 - HANDLING AND STORAGE PRECAUTIONS

PRODUCT SHOULD BE HANDLED AND STORED IN ACCORDANCE WITH INDUSTRY
ACCEPTED PRACTICES. IN THE ABSENCE OF SPECIFIC LOCAL CODE
REQUIREMENTS, NFPA OR OSHA REQUIREMENTS SHOULD BE FOLLOWED. USE
APPROPRIATE GROUNDING AND BONDING PRACTICES. STORE IN PROPERLY
CLOSED CONTAINERS THAT ARE APPROPRIATELY LABELED. DO NOT EXPOSE
TO HEAT, OPEN FLAME, STRONG OXIDIZERS OR OTHER SOURCES OF IGNITION.

SECTION 9 - HAZARD WARNING

DANGER !
EXTREMELY FLAMMABLE
GAS UNDER PRESSURE

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SECTION 10 - COMMENTS NONE

SECTION 11 - REGULATORY INFORMATION

SARA TITLE III / SUPERFUND AMENDMENTS AND RE-AUTHORIZATION ACT OF 1986 -
SECTIONS 302, 304, 311, 312 AND 313.

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT:

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS:

40 CFR PART 370 (52 FR 38344 - OCTOBER 15, 1987).

DEPENDING ON LOCAL, STATE, AND FEDERAL REGULATIONS, MATERIAL SAFETY
DATA SHEETS (MSD'S) OR LIST OF MSD'S (PRODUCT NAMES) MAY BE
REQUIRED TO BE SUBMITTED TO THE STATE EMERGENCY RESPONSE
COMMISSION, LOCAL EMERGENCY PLANNING COMMITTEE, AND LOCAL FIRE
DEPARTMENT IF YOU HAVE:

10,000 POUNDS OR MORE OF AN OSHA HAZARDOUS SUBSTANCE* OR
500 POUNDS OR THE THRESHOLD PLANNING QUANTITY WHICHEVER
IS LESS, OF AN EXTREMELY HAZARDOUS SUBSTANCE.

* REPORTABLE QUANTITY LEVELS CAN VARY FROM STATE TO STATE AND YEAR
TO YEAR DEPENDING ON APPLICABLE STATE AND/OR FEDERAL REGULATIONS.

THIS PRODUCT IS COVERED UNDER THE CRITERIA DEFINED IN OSHA'S HAZARD
COMMUNICATION STANDARD 29 CFR 1910.1200 (52 FR 31852 - AUGUST 24,
1987) AND SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD
CATEGORIES:

IMMEDIATE (ACUTE) HEALTH HAZARD
DELAYED (CHRONIC) HEALTH HAZARD
XX FIRE HAZARD
XX SUDDEN RELEASE OF PRESSURE HAZARD
REACTIVE HAZARD

DEPARTMENT OF TRANSPORTATION:

49 CFR 172.01 AS REVISED ON MAY 1, 1997.

PROPER SHIPPING NAME:	LIQUEFIED PETROLEUM GAS
DOT CLASSIFICATION:	FLAMMABLE GAS
DOT IDENTIFICATION NUMBER:	UN 1075
PLACARD:	FLAMMABLE GAS / 1075
HAZARD CLASS:	2.1

SECTION 12 - REGULATIONS / COMMENTS

MSDS DATE: 02 / 22 / 94

REVISED: 05 / 13 / 02

MSDS PREPARED BY THE DUKE ENERGY FIELD SERVICES INC. CORPORATE SAFETY GROUP

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