MATERIAL SAFETY DATA SHEET

PLEASE CAREFULLY READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT

May be used to comply with OSHA's Hazards Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

SECTION I (IDENTIFICATION)

Manufacturer/Supplier Name: UNIWELD PRODUCTS, INC.
2850 Ravenswood Road
Fort Lauderdale, FL 33312

Emergency Phone No.: (954) 584-2000

Product Name(s): **PROPANE ODORIZED**
Product Classification: **LIQUIFIED PETROLEUM GAS (PARAFFINIC HYDROCARBONS)**

SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

Important: Propane may contain various percentages of these hazardous components, depending on the source of supply.

INGREDIENT	% WEIGHT	CAS NO.	EXPOSURE LIMIT (mg/m^3)	
			OSHA PEL/TWA	ACGIH TLV/TWA
PROPANE	85-100	74-98-6	1,000 PPM	
PROPYLENE	0-10	115-07-1		
BUTANE & HEAVIER	0-2.5	106-97-8	800 PPM	800 PPM
ETHANE	0-5	74-84-0		
ETHYL MERCAPTAN (ODORANT)	<0.1	75-08-1		

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Property	Value
Appearance and odor	Colorless gas, liquid under pressure. Mercaptan "rotten eggs" odor
Boiling point	-44 degrees F.
Evaporation rate (Butyl Acetate = 1)	<1 (diffuses readily)
Flash point	-156 degrees F.
Liquid to vapor expansion ratio	1:270
Molecular weight	44.096
Solubility in water	Slight
Specific gravity (liquid)	0.500 - 0.510 (Water = 1)
Specific gravity (vapor)	1.52 (Air = 1)
Vapor pressure (maximum)	208 PSIG @ 100 degrees F.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability limits
Flammability limits by volume in air.
Lower 2.15 percent
Upper 9.6 percent

Ignition temperature
Auto ignition temperature is 940 degrees Fahrenheit.

Extinguishing media
Allow product to burn if source cannot be shut off safely.
Class B-C or A-B-C dry chemical or halon extinguishers can be used on small fires.
Apply water from a safe distance to cool containers, surrounding equipment, and structures.

Special fire-fighting procedures and precautions
Extremely flammable. Containers may explode if not sufficiently cooled with water spray.
Evacuate surrounding area of unprotected personnel and isolate. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves, and rubber boots) and a positive pressure NIOSH-approved self-contained breathing apparatus.

SECTION V - REACTIVITY DATA

Stability and hazardous polymerization
This product is stable. Hazardous polymerization will not occur.

Conditions and materials to avoid
Avoid heat, sparks, flame, and contact with strong oxidizing agents. Avoid buildups of static electricity. Prevent vapor accumulation.

Hazardous decomposition products
Carbon monoxide and unidentified organic products may be formed during combustion.

SECTION VI - HEALTH HAZARD DATA

Purpose
The health effects are consistent with requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Eye contact
Direct contact with liquid propane can result in eye burns.

Skin contact
Direct contact with liquid propane can result in skin burns (frostbite).

Inhalation
This product is classified as a simple asphyxiant.
High vapor concentrations may produce a reversible central nervous system depression (anesthesia).
Higher concentrations may produce asphyxiation.

▽ **WARNING: DO NOT BREATHE FUMES!**

Ingestion
Ingestion is not likely.

Signs and symptoms
Eye or skin burns (frostbite) as noted previously.
Early to moderate central nervous system depression may be evidenced by giddiness, headache, dizziness, and nausea. In extreme cases, unconsciousness may occur.
Asphyxiation may be noted by a sudden loss of consciousness. Death may quickly follow.

Aggravated medical conditions
Caution is recommended for personnel with pre-existing central nervous system or chronic respiratory diseases.

Acute toxicity data
Acute toxicity data is not applicable to this product.

Carcinogenicity Occupational exposure limits
This product is not classified as a carcinogen.
See the table in section 2

Cardiac effects
While there is no evidence that exposure to industrially acceptable levels of hydrocarbons have produced cardiac effects in humans, animal studies have shown that inhalation of high vapor levels of the components of this product have produced

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cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms. This latter effect was shown to be enhanced by hypoxia or the injection of adrenaline-like agents.

Effects of propylene
Laboratory animals exposed to high levels of propylene for prolonged periods of time showed evidence of effects in the liver, kidneys, and nasal cavity.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING & USE

Release, spill, or leak procedures
▽ **Warning!** Extremely flammable.

Eliminate sources of ignition.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.
Notify local fire department.
Disperse vapor clouds with water spray.
Shut off source of leak only if it can be done safely.

Training
Train all personnel involved in handling propane in proper handling and operating procedures.
Document all training.

Handling and storing
Handle and store propane in accordance with NFPA 58 and local fire codes.
Keep containers away from heat sources or temperatures exceeding 130 degrees Fahrenheit.
Do not drop or roll any container.
Store and transport containers with relief valves in vapor space.
Keep all container valves closed when not in use.
Keep protective caps (if applicable) on containers when not in use.

DOT cylinders
Take these precautions when using DOT cylinders:
Periodically inspect and requalify DOT cylinders in accordance with DOT and NFPA 58 codes.
Store and use cylinders with valves off and the relief valves in the container vapor space.
Shut all valves and follow recommended procedures before exchanging cylinders.

Special precautions
Containers, even those that have been emptied, can contain explosive vapors.
Do not cut, drill, grind, weld or perform similar operations on or near containers.

Propane odorization
▽ **Warning!** Any smell of odorant, even a faint one, may indicate a dangerous situation.

Ethyl mercaptan is the preferred warning agent for propane. Although ethyl mercaptan has excellent warning properties, "It is recognized that no odorant will be completely effective as a warning agent in every circumstance" (NFPA 58 A-1-4.1, 1992 edition).

Instances in which odorants may lose their effectiveness include, but are not limited to the following:
Odor may fade due to chemical oxidation in improperly prepared new tanks and cylinders or from rust, air and water in used containers that have been allowed to stand open to the atmosphere.
Odor may be absorbed and adsorbed by the walls of containers and distribution systems.
Odor in the gas escaping from underground leaks may be absorbed by certain types of soils.
Effectiveness of the odorant may be reduced by cold temperatures.
Other odors, such as from cooking or from a musty basement, may mask or cover up the mercaptan odor in propane.
Exposure to the mercaptan odor of propane for extended periods of time may affect a person's ability to detect the odorant.
Physical disabilities or the use of alcohol, tobacco, or drugs may decrease a person's ability to detect the odorant.

▽ **WARNING: CALIFORNIA PROPOSITION 65:** This product, when used for welding, soldering, brazing, cutting and other metal working or flame processes, produces fumes, particulates, residues and/or other by-products which contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. ▽ WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

SECTION VIII - FIRE AND EXPLOSION HAZARDS

Flammability limits
Flammability limits by volume in air.
Lower 2.15 percent
Upper 9.6 percent

Ignition temperature
Auto ignition temperature is 940 degrees Fahrenheit.

Extinguishing media
Allow product to burn if source cannot be shut off safely.
Class B-C or A-B-C dry chemical or halon extinguishers can be used on small fires.
Apply water from a safe distance to cool containers, surrounding equipment, and structures.

▽ **Warning!** Extremely flammable compressed gas.• Asphyxiant in high concentrations. • Skin contact with liquid causes burns similar to frostbite. • Ethyl mercaptan used as a warning agent may not be entirely effective in all situations. Read the warnings in section 7.

NFPA hazard rating
Hazard ratings are in the following table

Health hazard = 1
Fire hazard = 4
Reactivity = 0

Where:
0 = Least
1 = Slight
2 = Moderate
3 = High
4 = Extreme

SECTION VIIII - EMERGENCY AND FIRST AID PROCEDURES

Purpose
Follow these procedures in case of personal injuries resulting from use of this product.

Eye contact with liquid
Flush eyes with water. Get medical attention.

Skin contact with liquid
Flush with water. If frostbite or burn occurs, get medical attention.

Inhalation
Remove victim to fresh air and provide oxygen if breathing is difficult.
Seek immediate medical attention if victim is not breathing. Give artificial respiration.

Ingestion
Not applicable to this product.

SECTION X - EMPLOYEE PROTECTION

Respiratory protection
Use a NIOSH-approved respirator as required when airborn exposure limits are exceeded.
In accord with 29 CFR 1910.134, use either an atmosphere supplying respirator or an air purifying respirator for organic vapors.

▽ **WARNING: DO NOT BREATHE FUMES!**

Protective clothing
Avoid liquid contact with eyes or skin.
Wear safety glasses or goggles as appropriate.
Wear protective clothing as appropriate.

Additional protective measures
Use explosion-proof ventilation as required to control vapor concentrations.

SECTION XI - TRANSPORTATION REQUIREMENTS

DOT shipping name
Liquefied Petroleum Gas

DOT classification
Division 2.1 (Flammable Gas)

Other DOT requirements
UN 1075, Hazardous Materials Guide Number 115.

SECTION XII - OTHER REGULATORY CONTROLS

EPA/TSCA
The components of this product are listed on the EPA/TSCA inventory of chemical substances.

EPA Hazard Classification
This product is classified by 40 CFR 372 (SARA Section 313) as:

Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard
XXX		XXX	XXX	

Ozone-depleting substances
This product does not contain, nor was it directly manufactured with, any class I or class II ozone-depleting substances.

RCRA Information
This product is not subject to 40CFR 268.30 ban on the disposal of hazardous wastes.
If this product becomes a waste material, it would be an ignitable hazardous waste, having a waste code number D0001.
Refer to latest EPA or state regulations regarding proper disposal. Under EPA-RCRA, containers are considered hazardous unless depressurized to a pressure approaching atmospheric. Depressurize containers at a controlled rate to a flare.

State regulatory information
The ingredients in this product are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements.
Contact the appropriate agency in your state for details on your regulatory requirements.

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