Requirements	Description
1. IDENTIFICATION AND COMPANY NAME	Product identifier: PROPYLENE Product type : Gas Product Origin : United Kingdom (UK) Produced by : Intergas Importer/Supplier: National Industrial Gas Plants Address: Salwa Industrial Area Street 45, Gate 75 - Doha Qatar P.O. Box: 1391 Telephone: : Head Office + 974 4468-9083, Sales: 4442-8844, Plant: 4450-00-08 Fax : Head Office +974 4458-3333, Sales: 4450-00-33, Plant: 4460-35-32 E-mail: nigp@qatar.net.qa , sales45@nigpqatar.com Emergency HOT LINE Tel.: + 974-7776-6277 Web Site: https://www.almanaholding.com.qa
2. HAZARD IDENTIFICATION	Hazard Pictogram:  GHS02 – Flammable GHS04 – gases under pressure Signal word : Danger, Extremely |Flammable gas Hazard statements : H220 - Extremely flammable gas. H280 - Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation. May form explosive mixtures with air Physical hazards: Flammable gases, Category 1, Gases under pressure Precautionary statements Prevention: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Response: P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - In case of leakage, eliminate all ignition sources. Storage: P403 - Store in a well-ventilated place. P410+P403 - Protect from sunlight. Store in a well-ventilated place.
3. COMPOSITION / INGREDIENT IDENTIFICATION	Synonyms : Propylene Formula : C3H6 Molecular weight : 42,08 g/mol CAS-No. : 115-07-1 Classification of the substance or mixture : Flammable Gases - Category 1, Gases Under Pressure - Liquefied Gas

Requirements	Description
4. FIRST AID MEASURES	Inhalation: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped. Skin contact: For liquid spillage - flush with water for at least 15 minutes. Eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Ingestion: Ingestion is not considered a potential route of exposure. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
5. FIRE-FIGHTING MEASURES	Suitable extinguishing media: Water spray or fog. Dry powder. Unsuitable extinguishing media: Do not use water jet to extinguish, Carbon dioxide. <u>Advice for firefighters</u> Specific methods: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re- ignition may occur. Extinguish any other fire. Move containers away from the fire area if this can be done without risk. Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.
6. ACCIDENTAL RELEASE MEASURES	Observe the relevant local and international regulations. Evacuate the area of all non-essential personnel. Avoid contact with skin, eyes and clothing. Ventilate contaminated area thoroughly. Personal Precautions, Protective Equipment, and Emergency Procedures: Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter. Test atmosphere for flammable gas concentrations to ensure safe working conditions before personnel is allowed to enter the area. Environmental Precautions: Avoid release to the environment Methods and Material for Containment and Clean Up: Allow to evaporate. Attempt to disperse the gas or to direct its flow to a safe location, for example by using fog sprays. Additional Advice: Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapor may form an explosive mixture with air. Risk of explosion. Inform the emergency services if product enters surface water drains.
7. STORAGE AND HANDLING	General Precautions: Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine

<table>
<tr><th>Requirements</th><th>Description</th></tr>
<tr><td></td><td>Appropriate controls for safe handling, storage and disposal of this material. Air-dry contaminated clothing in a well-ventilated area before laundering. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Take precautionary measures against static discharges.

Precautions for Safe Handling: This product can create a low temperature exposure hazard when released as a liquid. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Avoid prolonged or repeated contact with skin. Electrostatic charges may be generated during handling. Electrostatic discharge may cause fire. Earth all equipment. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

Conditions for safe storage, including any incompatibilities:
– Observe all regulations and local requirements regarding storage of containers.
– Containers should not be stored in conditions likely to encourage corrosion.
– Container valve guards or caps should be in place.
– Containers should be stored in the vertical position and properly secured to prevent them from falling over.
– Stored containers should be periodically checked for general condition and leakage.
– Keep container below 50°C in a well ventilated place.
– Store containers in location free from fire risk and away from sources of heat and ignition.
– Keep away from combustible materials.
– Segregate from oxidant gases and other oxidants in store.
– All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.</td></tr>
<tr><td>8. EXPOSURE CONTROLS / PERSONAL PROTECTION</td><td>These Threshold Limit Values (TLVs) and Biological Exposure Index (BEIs) are provided by the American Conference of Governmental Industrial Hygienists (ACGIH 2016). The reference here is only for information purposes.
Occupational Exposure Limits (OEL):
<table>
<tr><th>Substance</th><th>Source</th><th>Type</th><th>ppm</th><th>Notation</th></tr>
<tr><td>Liquefied Petroleum Gas</td><td>ACGIH</td><td></td><td></td><td>Asphyxia</td></tr>
<tr><td>Butane</td><td>ACGIH</td><td>STEL</td><td>1000</td><td>CNS impair</td></tr>
<tr><td>Propane</td><td>ACGIH</td><td></td><td></td><td>Asphyxia</td></tr>
</table>
Biological Exposure Index (BEI): --

Appropriate Engineering Controls: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance.

Eye Protection: Chemical goggles (chemical mono goggles) or safety glasses in accordance to certified standards.
Hand Protection: Insulate gloves in accordance to certified standards.
Protective Clothing: Chemical and cold resistant gloves/gauntlets, boots, and apron.</td></tr>
</table>

<table>
<tr><th>Requirements</th><th>Description</th></tr>
<tr><td></td><td>Respiratory Protection: A certified-approved self-contained breathing apparatus (SCBA) operated in a pressure demand or other positive pressure mode or equivalent respirator should be used in situations of oxygen deficiency (concentration less than 19.5%), unknown exposure concentrations, conditions that are immediately dangerous to life or health (IDLH), or when exposure levels are above ACGIH exposure limits.
Thermal Hazards: Wear suitable protective clothing
Monitoring Methods: Gas detectors should be used when flammable gases/vapours may be released.
Environmental exposure controls: Local guidelines on emission limits for gas substances must be observed for the discharge of exhaust air containing gases. Take appropriate measures to fulfill the requirements of relevant environmental protection legislation.</td></tr>
<tr><td>9. HYSICAL AND CHEMICAL PROPERTIES</td><td>Appearance: Colorless
Odour: Odorized with Ethyl Mercaptan
Odour threshold: Data not available (for H2S 0.47 ppb)
pH: Data not available
Melting Point: -188°C, Depends on Propane-Butane Mix
Auto Ignition Temp: 287°C
Boiling Point: Propane –42 ºC / Butane – 0.5 ºC
Flash point: ca. -104 to -60 °C
Evaporation rate: Data not available
Flammability: Extremely Flammable gas
Upper / lower Flammability or Explosion limits: 1.55-9.6% (V)
Vapor pressure: Typical 380 – 840 kPa
Relative Density – Vap: 1.52 to 2.01 (Air = 1)
Relative Density – Liq: 0.507 to 0.585 (Water = 1)
Water solubility: Slightly soluble.
Solubility in other solvents: Data not available</td></tr>
<tr><td>10. STABILITY AND REACTIVITY</td><td>Reactivity: No hazardous reaction is expected when handled and stored according to provisions.
Chemical Stability: Extremely flammable gas
Possibility of Hazardous reaction: No hazardous reaction is expected when handled and stored according to provisions
Conditions to Avoid: Extremely high or low temperatures. Open flame. Heat. Sparks. Chlorine. Overheating.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Hazardous decomposition products are not expected to form during normal storage.</td></tr>
<tr><td>11. TOXICOLOGICAL INFORMATION</td><td>Basis for Assessment: Information given is based on product data, knowledge of the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of individual component(s).

<table>
<tr><th>Substance</th><th>Substance identifier</th><th>Acute Oral Toxicity (LD50 oral rat)</th><th>Acute Dermal Toxicity (LD50 dermal rabbit)</th><th>Acute Inhalation Toxicity (LC50 inhalation rat)</th></tr>
<tr><td>Butane</td><td>(CAS No.) 106-97-8 -</td><td></td><td></td><td>658 mg/l (exposure time: 4 h)</td></tr>
<tr><td>Propane</td><td>(CAS No.) 74-98-6 - -</td><td></td><td></td><td>382000 ppmV/4h</td></tr>
</table>
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Not classified
Respiratory or Skin Sensitization: Not classified.
Information on the likely routes of Exposure: Exposure may occur via inhalation, skin or eye contact.</td></tr>
</table>

Requirements	Description
12. ECOLOGICAL INFORMATION	Basis for Assessment: Ecotoxicological data have not been determined specifically for this product. Information given is based on knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). Toxicity Acute Toxicity: Physical properties indicate that petroleum gases will rapidly volatilise from the aquatic environment and that acute and chronic effects would not be observed in practice. Practically non-toxic: LL/EL/IL50 > 100 mg/l LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract Persistence and degradability: Expected to be readily biodegradable. Oxidises rapidly by photochemical reactions in air. Bioaccumulative Potential: Not expected to bioaccumulate significantly Mobility in Soil: Due to the extreme volatility of petroleum gases, air is the only environmental compartment in which they will be found. In air, these hydrocarbons undergo photo-degradation by reaction with hydroxyl radicals with half-lives ranging from 3.2 days for n-butane to 7 days for propane. Other Adverse Effects: Avoid release to the environment.
13. DISPOSAL CONSIDERATIONS	Disposal methods: This material is a gas and would not typically be managed as a waste. Disposal Containers and methods: Not applicable
14. TRANSPORT INFORMATION	Land & Sea transport ADR / RID: UN number: 1978 UN proper shipping name: Odorized Propane/Liquefied Petroleum gas  Transport hazard Class(es): 2.1 Packing group: I Haz Chem code: 2 WE Danger label (primary risk): Flammable gas Environmental hazards: No Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Pollution Category : Not applicable Ship Type : Not applicable Product Name: Not applicable Special Precaution: Not applicable Cylinder Transport: Transport and store cylinders and tanks secured in an upright position in a ventilated space, away from ignition sources (so relief valve is in contact with vapor space of cylinder or tank). Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard. Do not store with oxidizing agents, oxygen or chlorine cylinders. Empty cylinders/tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
15. REGULATORY INFORMATION	The regulatory information is not intended to be comprehensive. Other regulations may apply to this product.
16. OTHER INFORMATION	GHS Hazard Statement : H220: Extremely flammable gas Training advice: Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training.

.....End of document