This document supersedes the MSDS revision 03 dated 17th June, 2021

Requirements	Description
1. IDENTIFICATION AND COMPANY NAME	Product details: LIQUID NITROGEN Supplier Name: 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 pictograms:  GHS04 – gases under pressure Signal word : Warning Hazard statements: H281 – Contains refrigerated gas: may cause cryogenic burns or injury. Hazards Identification : Refrigerated liquefied gas Contact with this product may Cause cold burns or frostbite. Hazard Class and Category Code Regulation EC 1272/2008 (CLP) Physical hazards: Gases under pressure – Refrigerated gas – Warning – (CLP : Press. Gas) – H281 Precautionary statements - Prevention: P282-Wear cold insulating gloves, face shield, eye protection. - Response : P336+P315 – Thaw frosted parts with lukewarm water. Do no rub affected area. Get immediate medical advice / attention. Emergency Overview : Asphyxiate in high concentrations; do not breathe gas may cause suffocation by displacing the oxygen in air. Route of Entry : Inhalation, Skin/eye contact Storage : Store in well-ventilated place
3. COMPOSITION / INGREDIENT IDENTIFICATION	Substance/Preparation : Substance UN Number : 1977 EC Classification : Not classified as a dangerous substance Chemical Formula : N_2 Substance Name : Nitrogen (refrigerated) CAS No. : 7727-37-9 EC No. : 231-783-9 Contents : 100% Does not contain other components or impurities which will influence the classification of the product.

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4. FIRST AID MEASURES	First Aid Measures -Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness, dizziness, drowsiness sand nausea. Victim may not be aware of asphyxiation. Lack of sufficient oxygen may cause serious injury or death. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. -Eye/Skin Contact: • Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eye lids. Incase of frostbite spray with water for at least 15 minutes. Do not rub frozen parts as tissue damage may result. Apply sterile dressing. Get medical attention immediately. - Ingestion: • Ingestion is not considered a potential route of exposure.
5. FIRE-FIGHTING MEASURES	Flammable Class : Non-Flammable Specific Hazards : Exposure to fire may cause containers to rupture/explode Do not puncture or incinerate container Hazardous Combustion Products: • Under normal conditions of storage and use, hazardous decomposition products should not be produced. Extinguishing Media: • All known extinguishants can be used. Specific Methods: • If possible stop flow of product Move away from the container and cool with water from protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Special Protective Equipment For Fire Fighters: • Fire fighters should wear appropriate protective equipment and self- contained breathing apparatus.
6. ACCIDENTAL RELEASE MEASURES	Personal Precautions: • Evacuate area Ensure adequate air ventilation; isolate area until gas has dispersed Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources. Environmental Precautions: • Try to stop release Prevent dispersal of spilled material from entering sewers, basements, and work pits, or any where its accumulation can be dangerous.
7. STORAGE AND HANDLING	Safe use of the product: • Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Only experienced and properly instructed persons should handle gases under pressure. The product must be handled in accordance with good industrial hygiene and safety procedures. Do not smoke while handling product. Ensure the complete gas system was (or is regularly) checked for leaks before use. Handling: • Suck back of water into the container must be prevented. • Do not allow back feed into the container. • Open valve slowly to avoid pressure shock. • Close valve after each use and when empty. • Never allow any unprotected part of the body to touch un- insulated pipes or vessels that contain cryogenic liquids.

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	• Protect cylinders from physical damage; do not drag, slide or Drop. Use suitable hand truck for cylinder movement. • Use only properly specified equipment which is suitable for this Product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to suppliers' container handling instructions. Storage: Keep container below 50°C in a well-ventilated place.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION	Personal Protection: • Ensure adequate ventilation Protect eyes, face and skin from Liquid splashes Personal protective equipment for the body should be selected based on the task being preformed. <u>Exposure controls</u> Appropriate engineering controls: • Systems under pressure should be regularly checked for leakages. Provide adequate general and local exhaust ventilation. Individual protection measures personal protective equipment : • A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. • The following recommendations should be considered. Wear safety glasses with side shields. • Wear leather safety gloves and safety shoes when handling cylinders.
9. PHYSICAL AND CHEMICAL PROPERTIES	<u>Information on basic physical and chemical properties</u> Appearance Physical state at 20℃ /101.3kPa : Gas Colour : Colourless gas. Odour : No odour warning properties. Odour threshold : Odour threshold is subjective and in adequate to warn for over exposure. pH : Not applicable Molar mass [g/mol] : 28 Melting point [℃] : -210 Boiling point [℃] : -196 Critical Temperature [℃] : -147 Flash point [℃] : Not applicable Flammability rang [2vol% / in air] : Not applicable Vapour pressure [20℃] : Not applicable Relative density, liquid (water=1) : 0.8 Relative density, gas (air=1) : 0.97 Solubility in water [mg/l] : 20 Partition coefficient n-octanol/water : Not applicable Viscosity at 20℃ [mPa.s] : Not applicable Explosive Properties : Not applicable Molecular Weight : 28 Dew Point °F (°C) : - 91 (-80) Other Information: Gas/ Vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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10. STABILITY AND REACTIVITY	Stability and Reactivity: • Stable under normal conditions Liquid spillages can cause some materials to become brittle at low temperatures and will easily fracture Possibility of hazardous reactions: • Direct contact with liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation. • Condition to avoid: Direct contact with liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation. Prevent entrapment of liquid in closed systems. Incompatible materials: • Liquid spillages can cause embrittlement of structural materials. Hazardous decomposition products : • Under normal conditions of storage and use, hazardous decomposition products should not be produced.
11. TOXICOLOGICAL INFORMATION	Toxicology Information: No known toxicological effects from this product.
12. ECOLOGICAL INFORMATION	Ecological Effects Information: Can cause frost damage to vegetation
13. DISPOSAL CONSIDERATIONS	Waste treatment methods • May be vented to atmosphere in a well ventilated place. • Do not discharge into any place where its accumulation could be dangerous. • Refer to the code of practice of EIGA (Doc.30/10"Disposal of Gases, downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. • Contact supplier if guidance is required. General • Do not discharge in to any place where its accumulation could be dangerous. Contact supplier if guidance is required.
14. TRANSPORT INFORMATION	UN Number: 1977 HS Code : 73102990 Labeling  : 2.2: Non Flammable, non toxic gas. <u>Land transport</u> UN proper shipping name : NITROGEN, REFRIGERATION LIQUID Classification code : 3 A Packing Instruction(s) : P203 Tunnel Restriction : C/E Tank carriage: Passage forbidden through tunnels of category C, D and E: Other carriage: Passage forbidden through tunnels category E. HAZCHEM – Emergency Action Code: 2T 2 = Fine water spray. T=Recommended personal protective equipment: Full fire kit and breathing apparatus. Appropriate measures: dilute <u>Sea transport</u> Proper shipping name : NITROGEN, REFRIGERATION LIQUID Hazard class(es) : 2.2 Emergency Schedule (EmS) - Fire : F-C Emergency Schedule (EmS) - Spillage : S-V Packing Instruction(s) : P203

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	Air transport Proper shipping name : NITROGEN, REFRIGERATION LIQUID Hazard class(es) : 2.2 Passenger and Cargo Aircraft: Allowed Special precautions for user / Other transport information • Avoid transport on vehicles where the load space is not separated from the driver's compartment. • Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers. • Ensure there is adequate ventilation. • Ensure that containers are firmly secured. • Ensure cylinder valve is closed and not leaking. • Ensure valve outlet cap nut or plug (where provided) is correctly fitted. • Ensure valve protection device (where provided) is correctly fitted. • Compliance with applicable regulations.
15. REGULATORY INFORMATION	Safety, health and environmental regulations/legislation specific for the substance or mixture • EU Legislation / Seveso directive 96/82/EC : Not covered • National legislation: Ensure all national/local regulations are observed. • Chemical safety Assessment: A CSA does not need to be carried out for this product. Safety Phrases: Keep container in well-ventilated place.
16. OTHER INFORMATION	Indication of changes / Training Advice • Revised safety data sheet in accordance with commission regulation (EU) No 453/2010. • May cause frostbite. • Ensure all national/local regulations are observed. • Ensure operators understand the hazard of oxygen enrichment. • Receptacle under pressure. • Keep container in a well-ventilated place. • Do not breathe the gas. • Asphyxiant in high concentrations. • The hazard of asphyxiation is often overlooked and must be stressed during operation training. List of full text of H-statements in section 3. • H281 – Contains refrigerated gas; may cause cryogenic burns or injury. Further information Classification in accordance with calculation methods of regulation (EC) 1272/2008CLP/ (EC) 1999/45DPD. This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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