This document supersedes the MSDS revision 02 dated 17th June, 2021

Requirements	Description
1. IDENTIFICATION AND COMPANY NAME	Product details: ACETYLENE 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 Pictogram:  GHS02 – Flammable GHS04 – gases under pressure Signal word : Danger, Extremely flammable gas Information pertaining to particular dangers for man and environment: Warning: Contains gas under pressure; may explode if heated. Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Response: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Storage: Store in a well-ventilated place. Protect from sunlight. At more than 15psi (g) in gaseous form acetylene may get polymerized leading to severe explosion. Above 15.5 bar(g) @ -17deg.c in liquid form acetylene is highly explosive and unstable.
3. COMPOSITION / INGREDIENT IDENTIFICATION	Substance/Preparation : Substance UN Number : 1001 Components: This product is hazardous. Chemical Formula : C_2H_2 Substance Name: Acetylene CAS No:74-86-2 Contents : 100% EC No. : 200-816-9 Contains no other components or impurities which will influence the classification of the product.
4. FIRST AID MEASURES	Inhalation: • 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.

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	• 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: Exposure is considered unlikely. No eye irritation is anticipated. Skin: Treatment for thermal burns by immersing affected area in tepid water and lightly bandaging with sterile dressings. Ingestion: Ingestion is considered a potential route of exposure. Specific Methods: If possible, stop flow of product. Move away from the container and cool with water from a protected position. Continue water spray from protected position until container stays cool. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire. Special protective equipment for fire: Treat for asphyxia.
5. FIRE-FIGHTING MEASURES	Flammability: Highly flammable. Heating to decomposition produces acrid smoke and irritating fumes. Product will add fuel to a fire. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, petrol engines, heaters, naked lights, pilot lights, mobile phones, static electricity (such as from plastic materials or synthetic clothing) etc. when handling. Fire and Explosion: Highly flammable. Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Call fire brigade. This product will add fuel to a fire. Cool cylinders exposed to fire by applying water from a protected location. Do not approach cylinders suspected of being hot. DCP and CO2 fire extinguishers can be used to quench small fire. In case of large fire, allow the fire to burn out vacate the area; cool the nearby cylinders using water to quench the heat since this may lead to flying projectiles. Extinguishing: Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services. Drench and cool cylinders with water spray from protected area at a safe distance. If it is absolutely necessary to extinguish the flame, use only a dry chemical powder extinguisher. Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders. Hazchem Code: 2[S]E
6. ACCIDENTAL RELEASE MEASURES	Spillage: GAS CYLINDERS: If the cylinder is leaking, eliminate all potential ignition sources and evacuate area of personnel. Inform manufacturer/supplier of leak. Wear appropriate PPE and carefully move it to a well ventilated remote area, then allow discharging. Do not attempt to repair leaking valve or cylinder safety devices.
7. STORAGE AND HANDLING	Storage: Do not store near sources of ignition, oxidizing agents, flammable liquids or combustible materials. Cylinders should be stored: upright, prevented from falling, in a secure area; below 50°C, in a dry, well ventilated enclosure constructed of non-combustible material with firm level floor, away from areas of, Post "No Smoking or Open Flames" signs in the storage areas. Stored in cylinders in pressurized form dissolved in acetone. Cylinder must be kept vertical with caps in a cool ventilated atmosphere and the temp. must not exceed 50°C. Handling: Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing

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	hands before eating. Prohibit eating, drinking and smoking in contaminated areas. Never open an acetylene cylinder valve without the regulator attached. Gas regulator of suitable pressure and flow rating fitted to cylinder and manifold with low pressure gas distribution equipment which controls fuel gas mixture and flame. The regulator and other equipment must be compatible with the product and suited for the particular use. Never "snift" acetylene as it may ignite spontaneously. Instead, carefully inspect the outlet and if there are any signs of dirt, blow it out with a jet of clean compressed air or nitrogen.
8. EXPOSURE CONTROLS/ PERSONAL PROTECTION	Biological Limit: No biological limit allocated. Engineering: Maintain adequate ventilation. Confined areas (e.g. tanks) should be adequately ventilated or gas tested. Controls: Flammable/explosive vapors may accumulate in poorly ventilated areas. PPE: Wear safety boots, cotton or leather gloves and safety glasses. Where an oxygen-deficiency risk exists, wear an Air-line respirator. If undertaking welding operations, the appropriate personal protective equipment should be worn. Clothing must be 100% cotton or fire-resistant (eg. proban, nomex) rather than synthetic materials which can generate enough static electricity to cause an ignition and also can melt onto the skin at flame temperatures.
9. PHYSICAL AND CHEMICAL PROPERTIES	Physical state at 20°C : Gas Colour : Colourless gas Odour : Garlic like. Poor warning properties at low concentrations. Molecular weight : 26 Specific Volume of gas : 0.918m^3/kg @ 70°F (21 ^{O}C) Melting point : -80.8°C (-116°F) Flash Point : < 23°C Boiling Point : -84°C (-103.4°F) Critical Temperature : 35°C (-96.8°F) Vapour pressure (20°C) : 44 bar Relative density, gas (air=1) : 0.9 Relative density, liquid (water=1) : Not applicable Solubility in water (mg/l) : 1185 Flammability range (vol% in air) : 2.4 to 83 Auto-ignition temperature (°C) : 325
10. STABILITY AND REACTIVITY	Stability and reactivity: The product is stable. Stability: Dissolved in a solvent supported in a porous mass. Hazardous decomposition products: None Materials to avoid: Air, Oxidizer, Can form explosive mixture with air. Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 70% copper. May react violently with oxidants. Conditions to avoid: Keep away from heat/sparks/open/ flames/hot surfaces. No smoking. May decompose violently at high temperature and / or pressure or in the presence of a catalyst. Incompatibility with various substances: Extremely reactive or incompatible with the following materials: oxidizing materials. Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.
11. TOXICOLOGICAL INFORMATION	Health Hazard Summary: Asphyxiant gas - non irritant. May replace oxygen in the inhaled air and cause asphyxiation. As the amount of oxygen inhaled is reduced from 21-14% the pulse rate will accelerate and

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	the rate and volume of breathing will increase. The ability to maintain attention and think clearly is diminished, muscular co-ordination is somewhat disturbed. As oxygen decreases from 14-10% judgment becomes faulty, severe injuries may cause no pain. Muscular effort leads to rapid fatigue. Further reduction to 6% may cause nausea and vomiting. Ability to move may be lost. Permanent brain damage may result even after resuscitation from exposure to this low level of oxygen. Below 6% breathing is in gasps and convulsions may occur. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death will follow in a few minutes. Eye: Non irritating. Inhalation: Non irritating - Asphyxiant. Effects are proportional to oxygen displacement. Skin: Non irritating. Ingestion: Due to product form, ingestion is considered highly unlikely.
12. ECOLOGICAL INFORMATION	Environment: Fume from fabrication processes which use this gas/gas mixture may be harmful to the environment. Products of degradation: Products of degradation: carbon oxides (CO, CO2) and water. Environmental hazards: This product shows a low bioaccumulation potential.
13. DISPOSAL CONSIDERATIONS	Waste Disposal: Cylinders should be returned to the manufacturer or supplier for disposal of contents. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Legislation: Dispose of in accordance with relevant local legislation.
14. TRANSPORT INFORMATION	UN number: 1001 HS Code : 29012910 Labeling  : 2.1 : Flammable gas <u>Land transport</u> proper shipping name : ACETYLENE, DISSOLVED ADG class : 2 ADG Classification code : 4 F Packing Instruction(s)- General : P200 HAZCHEM – Emergency Action Code: 2SE <u>Sea transport</u> Proper shipping name : ACETYLENE, DISSOLVED Hazard class(es) : 2.1 Emergency Schedule (EmS) - Fire : F-D Emergency Schedule (EmS) - Spillage : S-U <u>Air transport</u> Proper shipping name : ACETYLENE, DISSOLVED Hazard class(es) : 2.1 Passenger and Cargo Aircraft: Do not load in passenger Aircraft. Cargo Aircraft only: Allowed Packing instruction: 200 <u>Special transport information</u> • Avoid transport on vehicles where the load space is not separated from the driver's

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	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	<u>Safety, health and environmental regulations/legislation specific for the substance or mixture</u> • National legislation: Ensure all national/local regulations are observed. Product related hazard information: The product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR. Hazard symbols: Highly flammable Risk phrases: Heating may cause an explosion. Explosive with or without contact with air. Highly flammable. Safety phrases: Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Poison Schedule: A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
16. OTHER INFORMATION	• Ensure all nationals/legal regulations are observed. • Ensure operators understand the flammability hazard. • The hazard of asphyxiation is often overlooked and must be stressed during operator training. 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. Please refer to the section 3 for NFPA and HMIS Hazard Codes.

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