



NIG Gases Sdn. Bhd.

Material Safety Data Sheet

Introduction Details

Date of preparation : 9/11/2007

Acetylene, Dissolved

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Acetylene,Dissolved
Trade Name /Synonyms: Acetylene, Ethyne, Ethine, Welding Gas, Narcylen, Vinilene
Chemical Name : Ethyne
Chemical Formula : C_2H_2
Molar Mass : 26.038
Chemical Family : Hydrocarbons - aliphatic
Use : Fuel gas for oxy-welding, cutting, heating, hardening, flame cleaning, etc.

1.2 Company Identification

Manufacturer's Name : NIG Gases Sdn. Bhd.
Distributor's Address : Lot PT 5074 & 5075, Jalan Jangur 28/43,
Seksyen 28, 40400 Shah Alam, Selangor.
Emergency telephone Number :03-55228222 (Hunting Line) / 03-55228288 (Hotline)

1.3 Contact Point

Designation :How Hui Shi (QA) 03-55228272 / 012-9155197
Johnny Yong (Production Manager) 03-55228255 / 012-3328937
Tan Kean Hooi (General Manager) 03-55228280 / 012-2055815

SECTION 2 : COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name : Ethyne

CAS No. : 74-86-2

Proportion : >98%

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Colourless

Odour : garlic like odour

Solubility : Water - 0.94% at 25°C

Solvent – Acetone, benzene, chloroform, ether

Boiling Point : -84.15°C

Melting Point : -80.8°C

Vapour pressure : 43.78 bar at 21.1°C

Evaporation Rate : Not applicable

Vapour Density : 0.9 (atm =1)

Specific Gravity : Not applicable

Flash Point : Not applicable

Autoignition Temperature: 305°C in air at 1 atm (101.3kPa)

Flammable Limit : 2.2-85%

SECTION 4 : HAZARD IDENTIFICATION

Major Health Hazards : Central nervous system depression, difficulty breathing

Physical Hazards : Extremely flammable gas, heating may cause an explosion. Explosive with or without contact with air. May cause flash fire. Electrostatic may be generated by flow, agitation, etc. May polymerize. Containers rupture or explode.

Ingestion : No information on significant adverse effects.

Eye contact : No information on significant adverse effects. Contact of liquid Acetylene may cause temporary irritation

Skin contact : No information on significant adverse effects. Contact of liquid Acetylene may cause temporary irritation

Inhalation : Low concentration (10-20% in air) – may cause narcotic effect. Symptoms may include dizziness, headache, nausea and loss of coordination.
High concentration – may cause asphyxiation and loss of mobility / consciousness.

SECTION 5 : FIRST AID MEASURES

Ingestion : Not applicable to gases.
Eye contact : Flush eyes with plenty of water, if symptoms persist seek medical attention.
Skin contact : Wash exposed skin with soap and running water. Remove contaminated clothing and wash before reuses. If symptoms develop seek medical attention.
Inhalation : Remove victim to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Keep victim warm and rested. Get medical attention.

SECTION 6 : FIRE FIGHTING MEASURES

Extinguishing Media : Carbon dioxide, powder extinguishers
Large fire – Use regular foam or flood with fine water spray.
Fire fighting instruction: Move cylinder from fire is safe to do so. Cool cylinder with water spray until well after the fire is out. Stay away from the end of tanks. For fires in cargo or storage area: Cool containers with water from manned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Cool cylinders with water. Apply water from a protected location or from a safe distance.
Special hazards : Extremely flammable. Avoid all sources of ignition, heat and naked flame. Container may rupture/explode when heated. Electrostatic discharges may be generated by flow or agitation resulting in ignition explosion.
Hazardous combustion products : Under fire conditions this product may emit to toxic and /or irritation fumes including carbon monoxide and carbon dioxide.

SECTION 7 : ACCIDENTAL RELEASE MEASURE

Leak / Spill : Avoid contact with combustible materials. Stop leak if possible without personal risk. Leak checking may be done by pressure drop test or by using soapy water joints and outlets. Shut cylinder valve to stop gas leak if possible and safe to do so. If cylinder or cylinder valve is leaking, the put on personal protective equipment, shut the cylinder valve depressurize the equipment, disconnect cylinder from equipment and move the cylinder to a well ventilated area, preferably out door and position to allow gas to escape. If possible, repair the leak or allow the cylinder to vent in external atmosphere. Mark empty cylinders “defective”. Return all faulty cylinders to supplier/manufacturer.

SECTION 8 : HANDLING AND STORAGE

Handling : Use only proper specified equipment or gas regulator, which is suitable for this product. Ensure equipment is adequately earthed. Suck back of water must be prevented. No smoking and open flame in areas, where acetylene is used or stored. Avoid contact with pure copper, mercury, silver and brass with greater than 70% copper.

Storage : Cylinders should be stored in a dry, fire resistant area that is well ventilated and away from heat and ignition sources. Keep cylinder below 50° C in a well-ventilated place. Acetylene should be stored away from cylinders containing oxidizing substance. Cylinders must be stored and used upright to prevent the escape of acetone.

SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit : NIOSH REL : 2500ppm, ceiling

Personal protection: Eye protection – not required but recommended

Glove – not required

Footwear – personnel engaged in the movement of gas cylinders shall be provided with safety footwear.

Respirator – Under conditions of frequent use or heavy exposure, respiratory protection.

SECTION 10 : STABILITY AND REACTIVITY

Stability : Unstable. May decompose violently on heating and shocking. Acetylene can form explosive mixture with air.

Condition to avoid : Avoid heat, flames, sparks and other source of ignition or oxidizer.

Incompatibles : Copper, silver, mercury or salt of these metal, fluorine, bromine and chlorine.

Composition Products : Oxides of carbon

Hazardous polymerization : Can occur when heated or under pressure. Avoid contact with curing agents, accelerators and/or initiators.

SECTION 11 : TOXICOLOGICAL INFORMATION

Toxicity Data : TCLo (inhalation, human) = 20 pph; central nervous system, respiratory system effects.

LCLo (inhalation, human) = 50 pph/5 minutes

LCLo (inhalation, human) = 500,000 ppm/5 minutes

Carcinogenicity: No

Reproductive effect : Insufficient data.

Effects of overexposure: Asphyxiation.

Chronic effects : Long time exposure to acetylene has no known health effects.

Target organs : Central nervous system, respiratory system

Medical conditions generally aggravated by exposure : Acute or chronic respiratory conditions may be aggravated by overexposure to the components of acetylene.

SECTION 12 : ECOLOGICAL INFORMATION

As Acetylene is lighter than air it will disperse rapidly in open areas. It does not pose a hazard to the ecology. Acetylene is biodegraded through various plant and bacterial systems by inactivating atmospheric acetylene through their nitrogen- fixing mechanisms.

Aquatic toxicity : LC50 (river trout): 33 hours, 200 mg/l.

SECTION 13 : DISPOSAL INFORMATION

General : Blown to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

Disposal of packaging : Must only be handled by the gas supplier.

SECTION 14 : TRANSPORT INFORMATION

This material is hazardous.

UN Number : UN1001

Hazard class / Div : 2.1 (Flammable gas)

Packaging & Labeling : High pressure cylinders.

Colour – Maroon

SECTION 15 : REGULATORY INFORMATION

Risk phrases : R2 Risk of explosion by shock, friction, fire or other sources of ignition

R5 Heating may cause an explosion.

R6 Explosive with or without contact with air.

Safety phrases : S9 Keep container in well ventilated place.

S16 Keep away from sources of ignition

S33 Take precautionary measures against static discharges

SECTION 16 : OTHER INFORMATION

NFPA Ratings:

Health = 1

Flammability = 4

Reactivity = 3