SAFETY DATA SHEET

Material Name: ACETYLENE, DISSOLVED

Section 1 – Product and Company Identification	
Product Identifier:	ACETYLENE, DISSOLVED
Other means of identification:	ACETYLENE, cutting fuel
Product Uses:	Industrial and professional use. Welding
Supplier Details:	Western Gasco Cylinders Ltd. 2169 Peardonville Road Abbotsford BC V2T 6J7
Emergency Phone Number:	(613)996-6666

Section 2 – Hazards Identification	
Classification per OSHA paragraph (d) of §1910.1200	Flammable gases– Category 1
Signal word	Extremely Flammable Gas
Hazard statement(s) Symbol	 May react explosively even in the absence of air at elevated pressure and/or temperature. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation. May form explosive mixtures with air.
Precautionary statement	Do not handle until all safety precautions have been read and understood Keep away from heat, sparks, open flames, hot surfaces. — No smoking Use and store only outdoors or in a well ventilated place Use a backflow preventive device in piping Fusible plugs in top, bottom, or valve melt at 98 °C to 107 °C (208° F to 224° F). Do not discharge at pressures above 15 psi (103 kPa) Close valve after each use and when empty Never put cylinders into unventilated areas of passenger vehicles

Section 3 – Compositions / Information of Ingredients	
Chemical Name & Formula	ACETYLENE
Chemical Formula	C_2H_2
CAS Number	74-86-2
Purity	>99

Section 4 – First Aid Measures	
Inhalation	Remove to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
Skin Contact	Wash off immediately with soap and plenty of water. Contaminated clothing presents a fire hazard and should be removed immediately. Get medical attention if irritation develops and/or persists.
Eye Contact	Consult a physician if direct contact with pressurized material occurs. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.
Ingestion	Not an expected route of exposure, refer to inhalation section above.
Most important symptoms, effects, acute and delayed	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. **Indication of any immediate medical attention and special treatment needed**
Immediate medical attention and special treatment needed	If symptoms occur, seek medical advice and attention.

Section 5 – Fire Fighting Measures	
Suitable extinguishing media	DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. Dry chemical. Water spray or fog.

Special hazards arising (e.g. nature of any hazardous combustion process)	If possible, stop the flow of gas. Do not extinguish the fire until supply is shut off as otherwise an explosive-ignition may occur. If the fire is extinguished and the flow of gas continues, GET AWAY! Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not direct water at source of leak or safety devices; icing may occur. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn. Use water spray to cool surrounding containers. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.
Special protective equipment and precautions for firefighters	Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. If the fire is extinguished and the flow of gas continues, GET AWAY! As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear

Section 6 – Accidental Release Measures	
Personal precautions, protective equipment, emergency procedures	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Consider the risk of potentially explosive atmospheres. Monitor oxygen level. All equipment used when handling the product must be grounded. Use non-sparking tools and equipment. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Do not touch or walk through spilled material.
Methods and materials for containment and clean up	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Messer location. DO NOT ATTEMPT TO REMOVE CYLINDERS THAT HAVE BEEN EXPOSED TO HEAT.

Section 7 – Handling and Storage	
Precautions for safe handling	Never use copper piping for acetylene service. Only steel or wrought iron pipe should be used. Open cylinder valve minimum amount required (no more than 1-1.5 turns) to deliver acceptable flow to enable the cylinder to be closed quickly in an emergency situation. Acetylene is shipped in a cylinder packed with a porous mass material, and a liquid solvent, commonly acetone. Acetylene is dissolved in the acetone solution and dispersed throughout the porous medium. When the valve of a charged acetylene cylinder is opened, the acetylene comes out of the solution and passes out in the gaseous form. IT IS CRUCIAL THAT FUSE PLUGS IN THE TOPS AND BOTTOMS OF ALL ACETYLENE CYLINDERS BE THOROUGHLY INSPECTED WHENEVER HANDLED. REMOVE AND QUARANTINE IN SAFE LOCATION ANY DEFECTIVE CYLINDER. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking and explosion proof "NO SMOKING" signs should be posted in storage and use areas. Use equipment purged with inert gas or evacuated prior to discharge from cylinder Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper Solvent (acetone) may accumulate in piping system. For maintenance use appropriate resistant gloves, eye goggles Operating pressure should be limited to 15 psig (103 kPa) or less. Consider the use of flashback arrestors Unless oxygen and acetylene are separated, there should be a non-combustible partition of at least 5 ft. high with a fire-resistance rating of one-half hour between cylinders. In the U.S. cylinders stored inside a building near user locations must be limited to total capacity of 2500 ft^3 of gas, exclusive of in-use or attached for use cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar,etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Use only with adequate ventilation. Use a backflow preventive device in piping. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's

	written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Only experienced and properly instructed persons should handle gases under pressure. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers. For additional information, consult the Compressed Gas Association's pamphlets P-1, G-1, G-1.1, AV-9, G-1.2, G-1.3, G-1.5, G-1.6, G-1.7, C-13, SB-4, NFPA #51, and OSHA 1910 Subpart H & Q.
Conditions for safe storage, including any incompatibilities	Outside or detached storage is preferred. Do not store cylinders on their side. This makes the acetylene less stable and less safe, and increases the likelihood of solvent loss resulting in decomposition. If rough handling or other occurrences should cause any fusible plug to leak, move the cylinder to an open space well away from an possible source of a sign on the cylinder warning of "Leaking Flammable Gas". Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Full and empty cylinders should be segregrated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Stored containers should be periodically checked for general condition and leakage

Incompatible materials	Oxidizing agents. Halogenated compounds. Halogens. Copper. Silver. Mercury. Brasses containing >65% copper and brazing materials containing silver or copper

Section 8 – Exposure Controls / Personal Protection	
Permissible exposure limits	There are no exposure limits for this product. Oxygen levels should be kept above 19.5% and below 23.5% for all personnel.
Appropriate Engineering Controls	Provide general ventilation, local exhaust ventilation, process enclosure or other engineering controls to maintain airborne levels below recommended exposure limits and to maintain oxygen levels above 19.5%. Explosion proof ventilation systems. Oxygen detectors should be used when asphyxiating gases may be released. Consider installation of leak detection systems in areas of use and storage. Systems under pressure should be regularly checked for leakages.
Eye/face protection Skin and Body Protection Respiratory Protection	Wear safety glasses with side shields (or goggles). Work gloves and safety shoes are recommended when handling cylinders. Wear fire/flame resistant/retardant clothing. Take precautionary measures against static discharge. Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

Section 9 – Physical and Chemical Properties			
Property	**Value**	**Property**	**Value**
Appearance	Colorless	Upper Flammability Limit	82%
Odor	Slight garlic	Lower Flammability Limit	2.5%
Odor Threshold	NA	Autoignition Temperature	296 °C / 565 °F
pH	NA	Decomposition temperature	NA
Melting / Freezing Point	-80.6 °C / -113 °F	Solubility	Soluble in water
		Partition Coefficient: noctanol / water	NA
Flash Point	NA	Auto Ignition Temperature	NA
Evaporation Rate	NA	Decomposition Temperature	NA
Flammability	Flammable Gas	Viscosity (dynamic)	NA

Section 10 – Stability and Reactivity	
Reactivity	Forms explosive acetylides with copper, silver and mercury. Do not use alloy containing more than 65% copper
Chemical Stability	Do not allow free gas (outside of cylinder) to exceed 15 psig. Do not expose cylinders to sudden shock or heat. Acetylene will decompose violently with cylinder failure. Do not discharge at pressures above 15 psi (103 kPa).
Possibility of Hazardous Reactions	May react explosively even in absence of air at elevated pressure and/or temperature. May form explosive mixtures with air.
Conditions to Avoid	Heat, flames and sparks
Incompatible Materials	Oxidizing agents. Halogenated compounds. Halogens. Copper. Silver. Mercury. Brasses containing >65% copper and brazing materials containing silver or copper.

Hazardous Decomposition Products	Hydrogen gas. Carbon monoxide. Carbon dioxide (CO_2).

Section 11 Toxicology Information	
Information on likely routes of exposure	Inhalation – High concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. As a narcotic gas or intoxicant, it causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels has not shown deleterious effects. Ingestion – Not an expected route of exposure Skin – May cause skin irritation and/or dermatitis Eye – May cause slight irritation
Symptoms related to physical, chemical, toxicological characteristics	High concentrations may cause asphyxia from lack of oxygen or act as a narcotic causing central nervous system depression. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing
Delayed, Immediate, chronic effects from short and long term exposure	May cause skin and eye irritation, this product does not contain any carcinogens or potential carcinogens listed by OSHA,IARC, or NTP
Numerical measures of toxicity	LD50 – not available LC50 – not available
Carcinogen Listing	Not carcinogenic
Section 12 – Ecological Information	
Ecotoxicity	No known acute aquatic toxicity
Persistence and degradability	No information available.
Bio-accumulative potential	Will not bioconcentrate

Section 13 – Disposal Considerations

Waste residues and disposal guidelines	Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Messer for proper disposal. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261)

Section 14 – Transport Information	
US DOT UN ID Number	UN1001
UN Proper Shipping Name	Acetylene, dissolved
DOT Transportation Hazard Class	DOT Class 2.1
Packing Group	Not Applicable
Special Provisions	N86,N88
Special Precautions	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. Isolate area to avoid personnel exposure or any other vehicles from entering the area. High pressure gas cylinders should have outlet valves closed, with plugs/valve caps secured in place. Load space must be separated from driver compartment. Cylinders should be firmly secured from moving or falling during transport.

Section 15 - Regulatory Information

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US FEDERAL REGULATIONS

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40
CFR 122.42)

Risk and Process Safety Management Programs

This material, as supplied, contains one or more regulated substances with specified thresholds under 40 CFR Part 68 or regulated as a highly hazardous chemical pursuant to the 29 CFR Part 1910.110 with specified thresholds:

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

Chemical Name	U.S. - CAA (Clean Air Act) Accidental Release Prevention - Toxic Substances	U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances	U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals
ACETYLENE		10000 lb	

US STATE REGULATIONS

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania

Acetylene 74-86-2	X	X	X
Acetone 67-64-1	X	X	X

Section 16 – Other Information

NFPA Health hazards 0 **Flammability** 4 **Instability** 2 **Physical and Chemical Properties** -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2019, CGA Recommended Hazard Ratings for Compressed Gases, 4th Edition.

USE OF THIS INFORMATION:

Western Gasco Cylinders Inc. offers this information to promote the safe use of this product through awareness of hazards and safety information. Those who use or transport or sell this product to others should: 1) Disseminate this information internally to all workplace areas, employees, agents and contractors likely to encounter this product

2) Provide supplemental hazards awareness, safety information, operation and maintenance procedures to

the workplace areas and employees, agents and contractors likely to encounter this product

3) Furnish this information to all their customers who purchase this product

4) Ask each purchaser or user of the product to notify its employees and customers of the product hazards and safety information.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Western Gasco Cylinders Inc. has taken reasonable care in preparing this document, however, since the use of this information and the conditions of use of the product are not within the control of Western Gasco Cylinders Inc., it is the user's obligation to determine the conditions of safe use of this product. The

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