

PRODUCT NAME: ACETYLENE*Newest Update***1. Chemical Product and Company Identification**

BOC Gases,
Division of,
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourn Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 2-0101

PRODUCT NAME: ACETYLENE
CHEMICAL NAME: Acetylene
COMMON NAMES/SYNONYMS: Ethyne, Acetylen, Ethine
TDG (Canada) CLASSIFICATION: 2.1
WHMIS CLASSIFICATION: A, B1, D2B

PREPARED BY: Loss Control (908)464-8100/(905)501-1700

PREPARATION DATE: 6/1/95

REVIEW DATES: 6/1/99

2. Composition, Information on Ingredients**EXPOSURE LIMITS¹:**

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Acetylene FORMULA: C ₂ H ₂ CAS: 74-86-2 RTECS #: AO9600000	85.0 to 99.6	Not Available	Simple Asphyxiant	Not Available
Acetone FORMULA: C ₃ H ₆ O CAS: 67-64-1 RTECS #: AL3150000	Not Available	1000 ppm TWA	500 ppm TWA 750 ppm STEL	LD ₅₀ : 1297 mg/kg ingestion/mouse

¹ Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 1998-1999 Threshold Limit Values for Chemical Substances and Physical Agents.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

3. Hazards Identification**EMERGENCY OVERVIEW**

Flammable colorless gas with slight garlic odor. Dangerous fire and explosion hazard. Avoid heat, sparks and flame. Simple Asphyxiant. This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. May cause anesthetic effects. Highly flammable under pressure. Spontaneously combustible in air at pressures above 15 psig. Acetylene liquid is shock sensitive. Contents under pressure. Use and store below 125 °F.

PRODUCT NAME: ACETYLENE

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion No
---------------------	-----------------------	--------------------	-------------------	-----------------

HEALTH EFFECTS:

Exposure Limits Yes	Irritant Yes	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None Reported		

Carcinogenicity: — NTP: No IARC: No OSHA: No

EYE EFFECTS:

None known since product is a gas at room temperature. Contact of liquid acetylene with the eyes may cause temporary irritation.

SKIN EFFECTS:

Skin effects are not likely. Contact with liquid acetylene may cause irritation and dermatitis upon repeated exposures.

INGESTION EFFECTS:

Ingestion is unlikely, since acetylene is a gas at room temperature.

INHALATION EFFECTS:

Acetylene is an asphyxiant and may cause anesthetic effects at high concentrations. High concentrations may exclude an adequate supply of oxygen to the lungs. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

Under normal operating conditions, acetone is not released from the cylinder. However, if the cylinder is overcharged with acetone or acetylene, acetone may occasionally "spit" out. Acetone is primarily a central nervous system toxin causing headache, nausea, dizziness, vomiting and fatigue. Moderate concentrations may cause respiratory irritation.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May aggravate pre-existing skin disorders.

NFPA HAZARD CODES

Health: 0
Flammability: 4
Instability: 3

HMIS HAZARD CODES

Health: 1
Flammability: 4
Reactivity: 3

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

4. First Aid Measures

EYES:

None normally required. Consult a physician if direct contact with pressurized material occurs. Immediately flush with low pressure, cool water for at least 15 minutes, opening eyelids to ensure flushing. Get medical attention.

SKIN:

Wash affected areas with soap and warm water. If irritation develops, seek medical attention.

INGESTION:

None normally required.

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing has stopped administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive. Keep victim warm and quiet.

5. Fire Fighting Measures

Conditions of Flammability: Flammable		
Flash point: Not Available	Method: Not Applicable	Autoignition: Temperature: 565°F (296°C)
LEL(%): 2.2		UEL(%): 80 to 85*
Hazardous combustion products: Carbon Monoxide, Carbon Dioxide		
Sensitivity to mechanical shock: Not Available		
Sensitivity to static discharge: Not Available		

FIRE AND EXPLOSION HAZARDS:

*Pure acetylene can ignite by decomposition above 15 psig; therefore, the UEL is 100% if the ignition source is of sufficient intensity. Pure acetylene is shock sensitive. Cylinder may rupture violently from pressure when involved in a fire situation.

GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURE ABOVE 15 PSI (207 kPa.). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate. Gas may travel to a source of ignition and flash back.

Fires involving acetylene occur occasionally at fusible metal pressure relief plugs at the tops and bottoms of cylinders, commonly due to hot metal or slag being dropped on the fusible plugs. When the fusible plug releases a large volume of acetylene will rush out, creating a "roaring" sound. The flame may extend a foot or two away from the cylinder until the pressure is reduced. In some cases, the other end of the cylinder may develop a coating of frost.

EXTINGUISHING MEDIA:

Carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS:

WARNING: ALWAYS EXTINGUISH A FIRE BEFORE CLOSING THE CYLINDER VALVE. If the flame is small from the fusible plug or valve stem, try to put it out. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. If the fire is allowed to keep burning it is likely that the fusible plug will melt and result in a large release of acetylene. A glove or heavy cloth or any wet material slapped on the flame will frequently extinguish it.

If the flame is large, burning from a fusible plug, **DO NOT** try to put it out unless the cylinder is outdoors or in a very well ventilated area free from sources of ignition. Usually it is very difficult to extinguish large fires because the escaping acetylene may be reignited by adjacent ignition sources, thereby possibly creating a confined space explosion. Keep containers cool with water spray. Continue to cool fire-exposed cylinders until well after flames are extinguished.

6. Accidental Release Measures

Extinguish all ignition sources. No smoking, flames, flares, or sparks in hazard area. Evacuate all personnel from affected areas. Isolate the area for over 1/2 mile in all directions in the event of leakage of a tank, rail car or tank truck. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

If possible to do safely, shut off ignition sources and stop the leak by closing the valve. For small leaks, cylinders may be moved to an area outdoors and away from any source of ignition. Circumstances which it is advisable to attempt removal of the cylinder are when cylinders are in close proximity to other compressed gases, when highly flammable materials or hazardous materials are in the vicinity of the acetylene cylinder(s), or where protection of the building is unusually difficult and spreading of a fire may produce a major loss of life or property. When the cylinder is removed, it may be hosed down with water to keep it cool. Open valve slowly to let the acetylene escape. Tag the cylinder with "WARNING - Leaking Flammable Gas". Close valve when empty.

7. Handling and Storage

Electrical Classification:

Class 1, Group A.

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 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 A SAFE LOCATION ANY DEFECTIVE CYLINDER.

Post "NO SMOKING OR OPEN FLAMES" signs in the storage area or use area. There should be no sources of ignition in the storage or use area.

Use only in well-ventilated areas. Stationary customer site vessels should be operated in accordance with the manufacturer's and BOC instructions. Do not attempt to repair, adjust or in any other way modify the operation of these vessels. If there is a malfunction or other type of operations problem with the vessel, contact the closest BOC location immediately for assistance.

MSDS: G-2

Revised: 6/1/99

PRODUCT NAME: ACETYLENE

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Outside or detached storage is preferred. DO NOT allow the temperature where cylinders are stored to exceed 120°F (49°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

Valve protection caps must remain in place unless container is secured with valve outlet piping to use point. Close valve after each use and when the container is empty. Do not drag, slide or roll cylinders on their sides. Use a suitable hand truck for container movement. Use a pressure reducing regulator when connecting container to piping or systems. Do not use gas directly from container. Do not heat container by any means to increase the discharge rate of product from the container.

Never attempt to repair or alter cylinders. Never tamper with pressure relief devices or fusible plugs. Under no circumstances allow a torch flame to contact the fusible plug. While welding, avoid contact of the cylinder welding equipment or electrical circuits.

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".

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 a total capacity of 2500 ft³ of gas, exclusive of in-use or attached for use cylinders.

Do not store cylinders on their side. This makes the acetylene less stable and less safe, and increases the likelihood of solvent loss and resultant decomposition.

For additional information, consult the Compressed Gas Association (CGA) pamphlets P-1, G-1, G-1.1, AV-9, G-1.2, G-1.3, G-1.6, G-1.7, LI-A, SB-4-1990; NFPA #51-1984, and OSHA 1910 Subpart H & Q.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS:

Provide general room ventilation and local exhaust to prevent accumulation above the exposure limit and to maintain oxygen levels above 19.5%. Mechanical ventilation should be designed in accordance with electrical codes.

EYE/FACE PROTECTION:

Safety goggles or glasses as appropriate for the job.

SKIN PROTECTION:

PVC or rubber in laboratory; as required for cutting and welding.

RESPIRATORY PROTECTION:

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

OTHER/GENERAL PROTECTION:

Safety shoes.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: 635	psia
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Bolling point	: -118.8	°F
	: -83.8	°C
Freezing point	: -113	°F
	: -80.6	°C
PH	: Not Available	
Specific gravity	: 0.906	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Soluble	
Odor threshold	: Not Available	
Odor and appearance	: Pure acetylene has an etheral odor. Commercial (carbide) acetylene has a distinctive garlic-like odor; A colorless gas.	

10. Stability and Reactivity

STABILITY:

Unstable - shock sensitive in the liquid state. 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.

INCOMPATIBLE MATERIALS:

Oxygen and other oxidizers including all halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing >66% copper and brazing materials containing silver or copper.

HAZARDOUS DECOMPOSITION PRODUCTS:

Acetylene decomposes at high pressure to its constituent elements of carbon and hydrogen. Carbon monoxide may be produced from burning.

Under certain conditions, acetylene forms readily explosive acetylide compounds when in contact with copper, silver, and mercury. Therefore, use of acetylene and these metals, or their salts, compounds, and high concentration alloys should be avoided.

The presence of moisture, certain acids or alkaline materials tends to enhance the formation of copper acetylides.

HAZARDOUS POLYMERIZATION:

Temperatures as low as 250°F (121°C) at high pressure, or at low pressure in the presence of a catalyst are sufficient to initiate a polymerization reaction. The hazard here is that the polymerization normally liberates heat and may, therefore, lead to ignition and decomposition of acetylene if conditions permit.

11. Toxicological Information

Low 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.

TC₁₀, human - Inhalation of 20 ppb inhaled has been shown to cause headache and dyspnea.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

12. Ecological Information

No data given.

13. Disposal Considerations

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 BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Acetylene, dissolved	Acetylene, dissolved
HAZARD CLASS:	2.1	2.1
IDENTIFICATION NUMBER:	UN 1001	UN 1001
SHIPPING LABEL:	FLAMMABLE GAS	FLAMMABLE GAS

15. Regulatory Information

U.S. FEDERAL REGULATORY INFORMATION

Acetone is regulated as a Hazardous Substance under CERCLA.

Acetylene is listed under the Clean Air Act (CAA) Section 112(r) with a threshold quantity (TQ) of 10,000 pounds.

SARA TITLE III NOTIFICATIONS AND INFORMATION

Releases of acetone in quantities equal to or greater than the reportable quantity (RQ) of 5,000 pounds are subject to reporting to the National Response Center under CERCLA, Section 304 SARA Title III.

SARA TITLE III - HAZARD CLASSES:

Acute Health Hazard

Fire Hazard

Sudden Release of Pressure Hazard

Reactivity Hazard

MSDS: G-2

Revised: 6/1/99

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

This information must be included on all MSDSs that are copied and distributed for this material.

REGULATED INGREDIENTS

INGREDIENT: Acetone

CAS NUMBER: 67-64-1

REGULATIONS: ILL MAS NJS NJW PAW STC WHM

ILL - Illinois Toxic Substance

MAS - Massachusetts Hazardous Substance

NJS - New Jersey Special Health Hazardous Substance

NJW - New Jersey Workplace Hazardous Substance

PAW - Pennsylvania Workplace Hazardous Substance

STC - SARA Section 313 Toxic Chemical

WHM - WHMIS (Canada)

INGREDIENT: Acetylene

CAS NUMBER: 74-86-2

PERCENT BY VOLUME: 95.0 to 99.6

REGULATIONS: ILL MAS NJS NJW PAW WHM

ILL - Illinois Toxic Substance

MAS - Massachusetts Hazardous Substance

NJS - New Jersey Special Health Hazardous Substance

NJW - New Jersey Workplace Hazardous Substance

PAW - Pennsylvania Workplace Hazardous Substance

STC - SARA Section 313 Toxic Chemical

WHM - WHMIS (Canada)

CANADIAN REGULATORY INFORMATION:

In Canada, regulations limit the capacity of acetylene cylinders stored inside a building at user locations to a total capacity of 2160 ft³ of gas in unsprinklered combustible structures, or 6130 ft³ in sprinklered buildings of combustible or non-combustible structures.

16. Other Information

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

MSDS: G-2

Revised: 6/1/99

PRODUCT NAME: ACETYLENE

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Date:	5/26/98	MSDS No.:	80C-M42
Supersedes:	New		
Trade Name:	BOC E7018-1 MR		
Sizes:	All		

MATERIAL SAFETY DATA SHEET

For Welding Consumables and Related Products

Conforms to Workplace Hazardous Materials Information System (WHMIS) Rev. November, 1988

[illegible]

The Lincoln Electric Company of Canada, Limited
179 Wicksteed Avenue
Toronto, Ontario M4G 2B9 CANADA
Phone: (416) 421-2600

Product Type:	Covered Electrode
Representative Classifications:	AWS E7018-1 CSA E48018-1

Prepared by The Lincoln Electric Company, Cleveland, Ohio, USA
(216) 481-8100, on the date shown above.

Salvatore D'Amico, Editor

IMPORTANT

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered by Section VII; see it for industrial hygiene information.

CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.

(1) The term "hazardous" in "Hazardous ingredients" should be interpreted as a term required and defined in the Hazardous Products Act and does not necessarily imply the existence of any hazard.

[illegible]

Notes: (*) Not listed. Nuisance value maximum is 10 milligrams per cubic meter. TLV value for iron oxide is 6 milligrams per cubic meter.

(LDLo, LCLo) Lowest published toxic concentration.

(iii) As respirable dust.

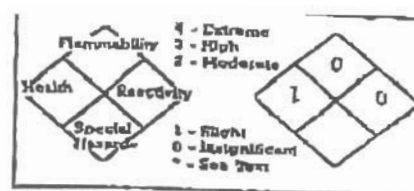
Physical data such as odor, vapor pressure, density, evaporation rate and freezing or boiling points are not listed as they are not applicable to this product and its use.

Non Flammable: Welding arc and sparks can ignite combustibles and flammable products. See CSA W117.2 Section 8.7 as referenced in Section VII.

(CONTINUED ON SIDE TWO)

Product: BOC E7018-1 MR

Date: 5/26/98



Section VI - Health Hazard Data and Toxicological Properties

Acute Lethality Values: LC₅₀ means the concentration of a substance in air that when administered by means of inhalation over a specified long of time in an animal assay, is expected to cause the death of 50% of a defined animal population.

LD₅₀ means the single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of a defined animal population.

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOC - (Not Otherwise Classified) is 5 mg/m³. The TLV-TWA is the time-weighted average concentration for a normal 8-hour workday and a 40 hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. See Section VII for specific fume constituents which may modify the TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:
Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases can cause loss of consciousness and death.

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and emphysema have been reported. Repeated exposure to fluorides may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis and spinal column. May cause skin rash.

Arc Rays can injure eyes and burn skin. **Skin cancer has been reported.**

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as crouching, kneeling or lying, if there is a high risk of unavoidable or accidental contact with workplace, use the following equipment: Semi-automatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Section VII - Hazardous Data

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both arc dep upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section III. Decomposition products of normal operation include those originating from the volatilization, reduction, or oxidation of the materials shown in Section IV, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide and fluorides; secondarily complex oxides of manganese, potassium, silicon and sodium.

Maximum fume exposure guideline for this product (based on manganese content) is 4.0 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.4, and F1.5, available from the American Welding Society, 850 N.W. LeJeune Road, Miami, FL 33126.

Section VIII - Precautionary Measures and Recommendations for Safe Handling and Use

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See CAN/CSA Standard Association Standard CFA-W117.2, Safety in Welding, Cutting, and Allied Processes, published by the Canadian Standards Association, 178 Rexdale Blvd., Rexdale, Ontario M9W 1K3 for more details on many of the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. **Keep exposure as low as possible.**

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or vent room does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

Protective Clothing: Wear head, hand, and body protection which help to prevent injury from radiation, sparks and electrical shock. See W117.2. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin ... or clothing or gloves if they are inside from work and ground.

Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local regulations unless otherwise noted.

Section IX - First Aid and First Aid Procedures

Call for medical aid. Employ first aid techniques recommended by the Canadian Red Cross. **IF BREATHING IS DIFFICULT** give oxygen. **IF NOT BREATHING** employ CPR (Cardiopulmonary Resuscitation) techniques. **IN CASE OF ELECTRICAL SHOCK**, turn off power and follow recommended treatment. In all cases call a physician.