

MechWorks, Inc.

HAZARD COMMUNICATION PROGRAM

General Company Policy:

The purpose of this document is to inform you that Mechworks Mechanical Contractors, 102-A Professional Park Drive, Beaufort, NC 28516, is complying with the North Carolina Occupational Safety and Health Communication Standard, 29CFR1910.1200 , by compiling a hazardous chemicals list, by using Safety Data Sheets (SDS), by ensuring containers are labeled, and by providing our employees with training.

This program applies to all work operations in our company where our employees may be exposed to hazardous substances under normal working conditions or during emergency situations.

Labels and Other Forms of Warning:

Mechworks Mechanical Contractors, Inc. management & Field personnel will be responsible for properly labeling and maintaining labels on all necessary chemical containers, vessels, tanks, etc. The labels will include chemical name, specific hazards, and manufacturer. On all stationary structures, appropriate signs and labels will be posted with all required information.

Training:

Every employee of Mechworks Mechanical Contractors, Inc. who works with or is potentially exposed to hazardous chemicals will receive initial training on the Hazard Communications Standard and the safe use of these chemicals. A program designed by Mechworks Mechanical Contractors, Inc. will include audio/visuals,

printed materials, and SDS, for all employees. Whenever a new hazard is identified, appropriate training will be provided to all employees. Management and supervisory level personnel will receive more specific training as required by any changes of the Standard or work practices.

The Training Program Described Above Will Include:

1. Summary of the Hazard Communication Standard.
2. Chemical and physical properties of specific hazards as defined in the hazardous chemicals lists.

MechWorks, Inc.

3. Health hazards, including signs and symptoms of exposure to specific hazards.
4. Specific instruction of preventative actions regarding exposure to hazards.
5. Specific work practices acceptable to Mechworks Mechanical Contractors, Inc.
6. Specific instruction in how to read and understand an SDS.
7. Instruction of Employees "Right to Know."

Re-training needs will be assessed by the Contractor and appropriate changes will be made. Under this program, employees of Mechworks Mechanical Contractors, Inc. will be informed of the contents of the Hazard Communication Standard, the hazardous properties of chemicals with which they work, safe handling procedures, and measures to protect themselves from these chemicals. They will also be informed of the hazards associated with specific non-routine tasks as defined by the work force in association with company management.

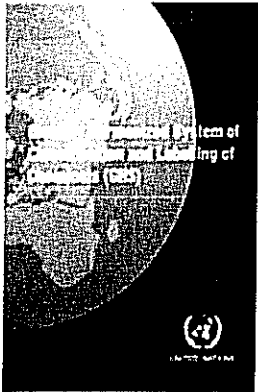
List of Hazardous Chemicals:

Mechworks Mechanical Contractors, Inc. management will prepare a list of all hazardous chemicals and related work practices used within the normal work of Mechworks Mechanical Contractors, Inc. employees. The list will be updated and job specific. The chemicals listed will be supplemented by appropriate Safety Data Sheets (SDS). A master list of hazardous chemicals will be maintained at the main office address of Mechworks Mechanical by the company Safety Officer.

Safety Data Sheets (SDS):

SDS provide the necessary information on the chemicals our employees use. The company safety inspector will be responsible for maintaining a loose- leaf binder of all appropriate SDS for Mechworks Mechanical Contractors, Inc. at the facility address. The list of MSDS will be available to all employees of Mechworks Mechanical Contractors, Inc. and training to read and interpret such will be provided during monthly meetings. The company Safety Officer will be responsible for acquiring all appropriate new SDS and placing them in the loose leaf binder.

Note: All employees of Mechworks Mechanical Contractors, Inc. have the right to ask for and receive additional information concerning the North Carolina Hazard Communication Standard from company management.



HazCom/Globally Harmonized System 2012 Training

This training is in regards to changes in our hazards communication program "HazCom". There are changes being made to the program to try to improve the quality and consistence of information provided to you. These changes are being made around the world, and is called the Globally Harmonized System "GHS."

The two topics we are covering in this training are:

- 1) Changes to the Material Safety Data Sheet – name and format standardization
- 2) How to read and understand the new label elements for materials

1) Changes to the MSDS:

The Material Data Safety Sheet "MSDS" will now be called simply a Safety Data Sheet "SDS". Please refer to the sample Safety Data Sheet for Acetylene provided to you in this packet. The Safety Data Sheet will conform to the following standard formatting:

Section

1. Identification of the substance or mixture and of the supplier
2. Hazards identification
3. Composition/information on ingredients Substance/Mixture
4. First aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological
12. Ecological information (non mandatory)
13. Disposal considerations (non mandatory)
14. Transport information (non mandatory)
15. Regulatory information (non mandatory)
16. Other information including information on preparation and revision of the SDS

ALL SDSs issued in the future will be organized this way.

Acetylene

Section 1. Chemical product and company identification

Product name	Acetylene
Supplier	AIRGAS INC., on behalf of its subsidiaries 259 North Redrock-Chester Road Suite 100 Redrock, PA 19087-5283 Phone: 610-667-5253
Product use	Synthetic/Analytical chemistry.
Synonym	acetylen acetylene; ethyne; ethyne, narycylen
MSDS #	001001
Date of Preparation/Revision	5/11/2011.
In case of emergency	1-888-734-3438

Section 2. Hazards identification

Physical state	Gas.
Emergency overview	WARNING: FLAMMABLE GAS. MAY CAUSE FLASH FIRE MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA CONTENTS UNDER PRESSURE. Keep away from heat, sparks and flame. Do not puncture or incinerate container. May cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container closed. Contact with rapidly expanding gases can cause frostbite.
Target organs	May cause damage to the following organs: Lungs, upper respiratory tract, central nervous system (CNS).
Routes of entry	Inhalation
Potential acute health effects	Inhalation
Eyes	Contact with rapidly expanding gas may cause burns or frostbite
Skin	Contact with rapidly expanding gas may cause burns or frostbite
Inhalation	Acts as a simple asphyxiant.
Ingestion	Ingestion is not a normal route of exposure for gases
Potential chronic health effects	May cause target organ damage based on animal data
Chronic effects	May cause damage to the following organs: Lungs, upper respiratory tract, central nervous system (CNS).
Target organs	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product
Medical conditions aggravated by over-exposure	See toxicological information (Section 11)

Section 3. Composition, information on ingredients

Name	CAS number	% Volume	Exposure limits
Acetylene	74-86-2	100	NIOSH REL (United States, 6/2009): CE L: 2662 mg/m ³ CE L: 2500 ppm

Acetylene

Section 4. First aid measures

No action should be taken involving any person, risk or without suitable training. If it is suspected that it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.	
Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	In case of contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignitions, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clear shoes thoroughly before reuse. Get medical attention immediately.
Frostbite	Try to warm up the frozen tissues and seek medical attention.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product	Flammable
Auto-ignition temperature	305°C (581°F)
Flash point	Closed cup: -8.5°C (-0.7°F)
Flammable limits	Lower: 2.5% Upper: 100%
Products of combustion	Decomposition products may include the following materials: carbon dioxide, carbon monoxide
Fire hazards in the presence of various substances	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.
Fire-fighting media and instructions	In case of fire, use water spray (fog), foam or dry chemical.
Special protective equipment for fire-fighters	In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Section 6. Accidental release measures

Personal precautions	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if it can be done safely.
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 7 for emergency contact information and section 3 for waste disposal.

Acetylene

Section 7. Handling and storage

Handling : Use only with adequate ventilation. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Keep container closed. Keep away from heat, sparks and flame. To avoid fire eliminate ignition sources. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Storage : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all open fire sources or ignition (spark or flame). Segregate from oxidizing materials. Cylinders should be stored upright with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (- 25 °F)

Section 8. Exposure controls/personal protection

Engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower exposure limits. Use explosion-proof ventilation equipment.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or self-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-03

Personal protection in case of a large spill : Chemically resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products. If a risk assessment indicates this is necessary.

Product name : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Ethyle : NIOSH REL (United States, 6/2009):
 CE L: 2662 mg/m³
 CE L: 2500 ppm

Section 9. Physical and chemical properties

Molecular weight : 26.04 g/mole

Molecular formula : C₂H₂

Melting/freezing point : Sublimation temperature: -81.8°C (-115.2 to °F)

Critical temperature : 35.3°C (95.5°F)

Vapor pressure : 935 (psig)

Vapor density : 0.907 (Air = 1)

Specific Volume (ft³/lb) : 4.7058

Gas Density (lb/ft³) : 0.069 (-80°C / -112 to °F)

Acetylene

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

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

Section 11. Toxicological information

Toxicity data

Chronic effects on humans : May cause damage to the following organs: lungs, upper respiratory tract, central nervous system (CNS).

Other toxic effects on humans : No specific information is available in our databases regarding the other toxic effects of this material to humans.

Specific effects : No known significant effects or critical hazards

Mutagenic effects : No known significant effects or critical hazards

Reproduction toxicity : No known significant effects or critical hazards

Section 12. Ecological information

Aquatic acotoxicity : Not available.

Products of degradation : Products of degradation: carbon oxides (CO, CO₂) and water.

Environmental fate : Not available


Environmental hazards : This product shows a low bioaccumulation potential.

Toxicity to the environment : Not available

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN 1001	ACETYLENE, DISSOLVED	2.1	Not applicable (gas)		Limited quantity: Yes. Packaging Instruction: Passenger aircraft Quantity in ton: Forbidden. Cargo aircraft: Quantity in ton: 15 kg

Acetylene	
UN: 00	ACETYLENE, DISSOLVED
Explosive Limit and Limited Quantity Index	0
PASSENGER CARRYING SHIP Index	75
PASSENGER CARRYING ROAD OR RAIL Index	Forbidden
Special provisions	38 42

Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.

Section 15. Regulatory information

- United States
 - TSCA 8(e) (UR): Partial exemption
 - United States inventory (TSCA 8b): This material is listed or exempted.
 - SARA 302/304/311/312 extremely hazardous substances: no products were found
 - SARA 302/304 emergency planning and notification: No products were found
 - SARA 302/304/311/312 hazardous chemicals: Ethylene
 - SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Ethylene Fire hazard, reactive Sudden release of pressure, irritate (acc.) has th hazard
 - Clean Air Act (CAA) 112 accidental release prevention - Flammable Substances: Acetylene

- State regulations
 - Clean Air Act (CAA) 112 regulated flammable substances: Ethylene
 - Connecticut Hazardous Material Survey: This material is not listed.
 - Florida substances: This material is not listed
 - Illinois Chemical Safety Act: This material is not listed
 - Illinois Toxic Substances Disclosure to Employee Act: This material is not listed
 - Louisiana Reporting: This material is not listed.
 - Louisiana Spill: This material is not listed.
 - Massachusetts Spill: This material is not listed
 - Massachusetts Substances: This material is listed
 - Michigan Critical Material: This material is not listed.
 - Minnesota Hazardous Substances: This material is not listed
 - New Jersey Hazardous Substances: This material is not listed
 - New Jersey Spill: This material is not listed
 - New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
 - New York Acutely Hazardous Substances: This material is not listed
 - New York Toxic Chemical Release Reporting: This material is not listed
 - Pennsylvania RTK Hazardous Substances: This material is listed.

Acetylene	
UN: 00	ACETYLENE, DISSOLVED
Explosive Limit and Limited Quantity Index	0
PASSENGER CARRYING SHIP Index	75
PASSENGER CARRYING ROAD OR RAIL Index	Forbidden
Special provisions	38 42

Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.

Section 16. Other information

- United States
 - Label requirements
 - FLAMMABLE GAS. MAY CAUSE FLASH F.R.E. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. CONTENTS UNDER PRESSURE.
- Canada
 - Label requirements
 - Class A: Compressed gas
 - Class B+: Flammable gas
 - Class F: Dangerously reactive material.

Hazardous Material Information System (U.S.A.)

National Fire Protection Association (U.S.A.)










2) The New Labels – How to Read and Understand Them:

Labels are now required to have the following 6 components:

1. **Product Name** or other identifier
2. **Pictogram** – The label contains a type of picture to represent a hazard classification, which is called a “Pictogram” (see pictograms at right). A Pictogram is used to communicate a hazard classification, such as:

- “**Health Hazard**” – Represents something that can hurt the body or cause a disease
- “**Flame**” – Represents something that burn or react in some other way and create heat
- “**Exclamation Mark**” – Represents something that could irritate the skin, eye or respiratory tract, be poisonous, or have narcotic effects.
- “**Gas Cylinder**” – Represents compressed gas
- “**Corrosion**” – Represents something that could eat away at the skin or eyes, or be corrosives to metals
- “**Flame Over Circle**” – Represents oxidizers – something that adds oxygen to speed up a reaction, such as rusting, flame, or explosion
- “**Environment**” – Something that could hurt the environment, specifically add poison to creeks, streams, rivers, etc. (optional)
- “**Skull and Crossbones**” – Represents a material that is extremely poisonous that could make you very sick or even kill you

**Hazards Communication System –
Pictograms and Hazards:**



<p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> • Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

3. **Signal Word** - There are two signal words: **Danger** means a more severe hazard within a hazard class. **Warning** is for a less severe hazard.
4. **Hazard statement(s)** – (See the bullets under each pictogram example - above right) Used to describe the nature of the hazards of a hazardous product, and where appropriate, the degree of the hazard. **Examples:** “Explosive; fire, blast or projection hazard”, “Flammable liquid and vapor, Harmful if swallowed”, “Causes serious eye damage”, “May cause drowsiness or dizziness”, “May be harmful if swallowed or if inhaled”, and “Causes skin and eye irritation”.
5. **Precautionary statement(s)** – A phrase (and/or pictogram) which describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposures to a hazardous product, or improper storage or handling of a hazardous product. Here are the five types of precautionary statements used and an example for each : 1) **General** - “Keep out of reach of children”, 2) **Prevention** – “Keep away from heat/sparks/open flames/hot surfaces. No smoking.”, 3) **Response** (in case of accidental spillage or exposure, emergency response and first-aid) – “Rinse skin with water/shower”, 4) **Storage** – “Store in a well-ventilated place”, and 5) **Disposal** – “Dispose of contents/container to hazardous materials location”.
6. The name, address, and telephone number of the producing/distributing company

Labeling

1910.1200(f)

SAMPLE LABEL

<p>CODE _____</p> <p>Product Name _____</p> <p>Company Name _____</p> <p>Street Address _____</p> <p>City _____ State _____</p> <p>Postal Code _____ Country _____</p> <p>Emergency Phone Number _____</p>	<p>Product Identifier _____</p> <p>Supplier Identification _____</p>	<p>Hazard Pictograms</p> <div style="display: flex; justify-content: space-around;"></div> <p>Signal Word Danger</p> <p>Hazard Statements Highly flammable liquid and vapor. May cause liver and kidney damage.</p>
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Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO₂) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Precautionary Statements

Supplemental Information
Directions for Use

Fill weight _____ Lot Number _____
Gross weight _____ Fill Date _____
Expiration Date: _____