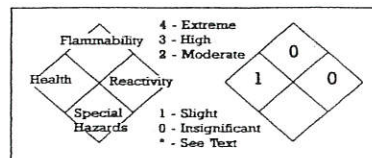




Product: Excalibur 7018 MR

Date: 6/20/2008



## SECTION IV - HEALTH HAZARD DATA

**Threshold Limit Value:** The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m<sup>3</sup>. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

**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 it 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 some lung fibrosis 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. **WARNING:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

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 sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

**Emergency and First Aid Procedures:** Call for medical aid. Employ first aid techniques recommended by the American 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.

## SECTION V - REACTIVITY DATA

**Hazardous Decomposition Products:** Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent 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 worker 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 II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, 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, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

## SECTION VI AND VII

### CONTROL MEASURES AND PRECAUTIONS 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 American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at <http://www.lincolnelectric.com/community/safety/>) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 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 ventilation 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.

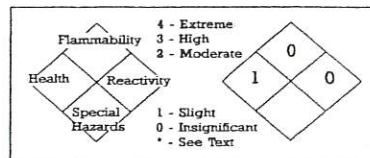
**Protective Clothing:** Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin ... or clothing or gloves if they are wet. Insulate 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. No applicable ecological information available.



Product: UltraCore 71A75 Dual

Date: 8/1/2008



## SECTION IV - HEALTH HAZARD DATA

**Threshold Limit Value:** The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m<sup>3</sup>. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

**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).

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 some lung fibrosis 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. **WARNING:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq).

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 sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

**Emergency and First Aid Procedures:** Call for medical aid. Employ first aid techniques recommended by the American 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.

## SECTION V - REACTIVITY DATA

**Hazardous Decomposition Products:** Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent 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 worker 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 II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

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

Maximum fume exposure guideline for this product (based on manganese content) is 3.0 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, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

## SECTION VI AND VII

### CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

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**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 ventilation 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 hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1.

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 wet. Insulate 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. No applicable ecological information available.



SDS NO. 7970-W  
DATE REVISED: 06/17/2011

## SAFETY DATA SHEET

This Safety Data Sheet complies with European Commission Directive 91/155/EEC, ISO 11014-1 and ANSI Z400.1

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ATOM ARC LOW HYDROGEN WELDING ELECTRODES  
**Application:** Arc Welding  
**Classification:** AWS A5.1 & A 5.5  
**Supplier:** THE ESAB GROUP, INC., 801 Wilson Avenue, Hanover, PA 17331  
**Telephone No.:** 1-717-637-8911, 1-800-933-7070  
**Emergency No.:** 1-717-637-8911 and 1-800-424-9300 (CHEMTREC)  
**Web site:** [www.esabna.com](http://www.esabna.com)

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Coated metal rods in varying colors. These products are normally not considered hazardous as shipped. Gloves should be worn when handling to prevent contaminating hands with product dust.

Some of these products contain nickel, which is classified as a skin sensitizer and a suspect carcinogen. These products contain titanium dioxide which is possibly carcinogenic. These products contain quartz, but normally not in an inhalable fraction. Quartz can cause silicosis and may cause cancer.

Avoid eye contact or inhalation of dust from these products. Skin contact is normally no hazard but should be avoided to prevent possible allergic reactions.

Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device.

When these products are used in a welding process, the most important hazards are heat, radiation, electric shock and welding fumes.

**Heat:** Spatter and melting metal can cause burn injuries and start fires.

**Radiation:** Arc rays can severely damage eyes or skin.

**Electricity:** Electric shock can kill.

**Fumes:** Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

These products are preparations of core wire with extruded coating.

Ingredients	CAS#	EINECS#	Hazard classification <sup>(1)</sup>	IARC <sup>(2)</sup>	NTP <sup>(3)</sup>	OSHA List <sup>(4)</sup>
Calcium Carbonate	1317-65-3	215-279-6	No	--	--	--
Calcium Fluoride	7789-75-5	232-188-7	No	--	--	--
Chromium	7440-47-3	231-157-5	No	--	--	--
Copper	7440-50-8	231-159-6	No	--	--	--
Iron	7439-89-6	231-096-4	No	--	--	--
Manganese	7439-96-5	231-105-1	No	--	--	--
Mineral Silicates	All considered to be quartz					
Bentonite Clays	1302-78-9	215-108-5	No	--	--	--
Chlorite	14808-60-7	238-878-4	T; R45	1	K	--
Feldspar	14808-60-7	238-878-4	T; R45	1	K	--
Hectorite	14808-60-7	238-878-4	T; R45	1	K	--
Pyrophyllite	14808-60-7	238-878-4	T; R45	1	K	--
Wollastonite	14808-60-7	238-878-4	T; R45	1	K	--
Zircon	14808-60-7	238-878-4	T; R45	1	K	--
Molybdenum	7439-98-7	231-107-2	No	--	--	--
Nickel	7440-02-0	231-111-4	Carc. Cat. 3; R40-R43	2B	S	--

Ingredients	CAS#	EINECS#	Hazard classification <sup>(1)</sup>	IARC <sup>(2)</sup>	NTP <sup>(3)</sup>	OSHA List <sup>(4)</sup>
Other Silicates						
Kaolinite Clay	1332-58-7	310-194-1	No	--	--	--
Mica (2 possible CAS numbers)	12001-26-2 12003-38-2	Not found 234-426-5	No No	-- --	-- --	-- --
Talc	14807-96-6	238-877-9	No	1	K	--
Silicate Binder (Potassium Silicate)	1312-76-1	215-199-1	No	--	--	--
Silicate Binder (Sodium Silicate)	1344-09-8	215-687-4	No	--	--	--
Silicon	7440-21-3	231-130-8	No	--	--	--
Silicon Dioxide	14808-60-7	238-878-4	T; R45	1	K	--
Titanium Oxide	13463-67-7	236-675-5	No	##	--	--
Vanadium	7440-62-2	231-171-1	No	--	--	--
Zirconium	7440-67-7	231-176-9	F; R15-17	--	--	--

<sup>(1)</sup> Hazard Classification according to European Council Directive 67/548/EEC, for R-phrases, see Section 16.

<sup>(2)</sup> Evaluation according to the International Agency for Research on Cancer.

1 – Human Carcinogen 2B – Possibly carcinogenic to humans

<sup>(3)</sup> Classification according to the 11th Report on Carcinogens, published by the US National Toxicology Program.

K – Known Carcinogen S – Suspect Carcinogen

<sup>(4)</sup> Carcinogen listing according to OSHA, Occupational Safety & Health Administration (USA).

## Presently designated to become 2B with publication of monograph.

APPROXIMATE COMPOSITION (Wt. %)

Product Trade Name	Mn	Cu	Ni	Cr	V	CaCO <sub>3</sub>	CaF <sub>2</sub>	Si & SiO <sub>2</sub>	Silicate Binder	TiO <sub>2</sub>	Mineral Silicates	Mo	Fe	AWS Classification
<b>Atom Arc</b>														
7018	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	70-85	E7018*
7018 Acclaim	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	70-85	E7018*
7018-1	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	70-85	E7018-1*
7018-AC	2-3	--	--	--	--	5-10	1-5	1-3	1-3	9-14	<1	--	70-80	E7018
7018-B2L	1-2	--	--	1	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E7018-B2L*
7018-C3L	1-2	--	<1.1	<0.2	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E7018-C3L*
7018-LC	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	67-82	E7018
7018-M	1-2	--	--	--	--	6-12	5-10	1-3	1-3	1-3	1-3	<1	65-80	E7018M*
7018-Mo	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	<1	65-80	E7018-A1*
7018-SR	1-2	--	--	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	70-85	E7018*
7028	2-3	--	<0.3	--	--	1-5	1-5	<1	2-4	5-10	1-3	--	75-80	E7028*
8018	1-2	--	<1	--	--	5-10	5-10	1-3	1-3	1-3	1-3	--	65-80	E8018-C3*
8018-B3L	1-2	--	--	1-2	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E8018-B3L*
8018-B6	<1	--	--	3-5	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	62-77	E8018-B6*
8018-B6L	<1	--	--	3-5	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	62-77	E8018-B6L*
8018-B8	1-2	--	--	5-7	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	60-70	E8018-B8*
8018-C1	1-2	--	1-2	--	--	6-11	5-10	1-3	1-3	1-3	1-3	--	65-80	E8018-C1*
8018-CM	1-2	--	--	1	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E8018-B2*
8018-N	1-2	--	2-3	--	--	6-11	5-10	1-3	1-3	1-3	1-3	--	65-80	E8018-C2*
8018-NM	1-2	--	<1	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E8018-NM1*
8018-SR	1-2	--	<1	--	--	5-10	5-10	1-3	1-3	1-3	1-3	<1	65-80	E8018-C3*
8018-W	1-2	<0.5	<0.5	<0.5	--	5-10	5-10	1-3	1-3	1-3	1-3	--	65-75	E8018-W2*
9015-B9	1-2	--	<0.5	6-8	<0.5	6-11	5-10	1-3	1-3	1-3	1-3	<1	60-70	E9015-B9*
9018	1-2	--	1-2	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E9018-M*
9018-CM	1-2	--	--	1-2	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E9018-B3*
9018-SR	2-3	--	<1	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-75	E9018-G*
9018-B9	1-2	--	<0.5	6-8	<0.5	6-11	5-10	1-3	1-3	1-3	1-3	<1	60-70	E9018-B9*
10018	2-3	--	1-2	<0.5	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E10018-M*
10018-M1	1-2	--	1-2	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-75	None
10018-MM	2-3	--	--	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E10018-D2*
10718-M	1-2	--	1-2	<0.5	<0.5	5-10	5-10	1-3	1-3	1-3	1-3	<1	70-80	E10718-M
T	2-3	--	1-2	<0.5	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E11018-M*
12018	2-3	--	1-2	<1	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	E12018-M*
12018-M2	2-3	--	2-3	--	--	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	None

• Also includes H4R designator.

Product Trade Name	Mn	Cu	Ni	Cr	V	CaCO <sub>3</sub>	CaF <sub>2</sub>	Si & SiO <sub>2</sub>	Silicate Binder	TiO <sub>2</sub>	Mineral Silicates	Mo	Fe	AWS Classification
4130	1-2	–	1	<0.5	–	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	None
4130-LN	1-2	–	<1	<0.5	–	6-11	5-10	1-3	1-3	1-3	1-3	<1	65-80	None
4140	1-2	–	–	<1	–	5-10	5-10	1-3	1-3	1-3	1-3	<1	65-80	None
4340	1-2	–	1-2	<1	–	5-10	5-10	1-3	1-3	1-3	1-3	<1	65-80	None

#### 4. FIRST AID MEASURES

- Inhalation:** If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.
- Eye contact:** For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.
- Skin contact:** For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water.
- Electric shock:** Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). Immediately call a physician.
- General:** Move to fresh air and call for medical aid.

#### 5. FIRE FIGHTING MEASURES

No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning materials and fire situation. Wear self-contained breathing apparatus as fumes or vapors may be harmful.

#### 6. ACCIDENTAL RELEASE MEASURES

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

- Personal precautions: refer to Section 8.  
Environmental precautions: refer to Section 13.

#### 7. HANDLING AND STORAGE

##### Handling:

Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest.

Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

##### Storage:

Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

#### 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust.

##### Engineering measures:

Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep working place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

##### Personal protective equipment:

Use respirator or air supplied respirator when welding or brazing in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. The following limits can be used as guidance. For information about welding fume analysis refer to Section 10.

Substance	CAS#	ACGIH TLV <sup>(1)</sup> mg/m <sup>3</sup>	OSHA PEL <sup>(2)</sup> mg/m <sup>3</sup>
Calcium Carbonate	1317-65-3	Withdrawn	15*, 5**
Calcium Fluoride (as F)	7789-75-5	2.5	2.5
Chromium Compounds	7440-47-3		
Metal (as Cr)		0.5	1
Cr (VI), inorganic, water insoluble (as Cr)		0.01	0.005
Cr (VI), inorganic, water soluble (as Cr)		0.05	0.005

Substance	CAS#	ACGIH TLV <sup>(1)</sup> mg/m <sup>3</sup>	OSHA PEL <sup>(2)</sup> mg/m <sup>3</sup>
Copper	(fume, As Cu) (dust & mists, as Cu) 7440-50-8	0.2 1	0.1 1
Iron	(as iron oxide) 7439-89-6	5**	10 (fume)
Iron and Iron Oxides	7439-89-6	5**	10 (fume)
Manganese and inorganic compounds	(as Mn) 7439-96-5	0.2	5 Ceiling
Mineral Silicates (no exposure anticipated) All substances with CAS of 14808-60-7 are quartz.			
Bentonite Clays	1302-78-9	None	None
Chlorite Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Feldspar Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Hectorite Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Pyrophyllite Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Wollanstanite Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Zircon Silica-Crystalline-Quartz	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Molybdenum	(metal and insoluble compounds, as Mo) (soluble compounds, as Mo) 7439-98-7	3 **, 10 *** 0.5 **	15* 5
Nickel, elemental	7440-02-0	1.5***	1
Other Silicates			
Kaolin	1332-58-7	2**	15*, 5**
Use Quartz Formula	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Mica	12001-26-2	3**	20 mppcf quartz <1%
Talc (no asbestos)	14807-96-6	2**	20 mppcf quartz <1%
Silicate Binder (Potassium Silicate & Sodium Silicate)	1312-76-1 1344-09-8	None	None
Silicon	7440-21-3	Withdrawn	15*, 5**
Silicon Dioxide (quartz)	14808-60-7	0.025**	<u>10 mg/m<sup>3</sup></u> ### %SiO <sub>2</sub> +2
Titanium Oxide	13463-67-7	10	15*
Vanadium	7440-62-2	None	None
Zirconium & Zirconium Compounds	(as Zr) 7440-67-7	5, 10 (STEL)	5

<sup>(1)</sup> Threshold Limit Values according to American Conference of Governmental Hygienists, 2011

<sup>(2)</sup> Permissible Exposure Limits according to the Occupational Safety & Health Administration (USA)

Unless noted, all values are for 8 hour time weighted averages (TWA).

\* Total dust, \*\* Respirable fraction, \*\*\* Inhalable fraction.

### Respirable dust

**NOTE:** Some of these products may not contain all of the materials listed. For details of composition, refer to the COMPOSITION TABLE in Section 3.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid, non-volatile with varying color.

Melting Point: >1300 °C/>2300 °F

## 10. STABILITY AND REACTIVITY

General: These products are only intended for normal welding purposes.

Stability: These products are stable under normal conditions.

Reactivity: Contact with chemical substances like acids or strong bases could cause generation of gas.

When these products are used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal and coating.

The amount of fumes generated from manual metal arc welding varies with welding parameters and dimensions but is generally no more than 7 to 20 g/kg consumable. Fumes from these products may contain compounds of the following chemical elements: Fe, O, Mn, Zr, Cr, Ni, F, Na, Si, K, Ca, Cu, Mo, V, Mg, and Ti. The rest is not analyzed, according to available standards.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8. A significant amount of the chromium in the fumes can be hexavalent chromium, which has a very low exposure limit in some countries. Manganese and nickel also have low exposure limits, in some countries, that may be easily exceeded.

Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

## 11. TOXICOLOGICAL INFORMATION

Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).

Acute toxicity: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Chronic toxicity: Overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait. Inhalable quartz is a respiratory carcinogen; however, the process of welding converts crystalline quartz to the amorphous form which is not considered to be a carcinogen.

## 12. ECOLOGICAL INFORMATION

Welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

## 13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available.

USA RCRA: Unused products or product residue containing chromium is considered hazardous waste if discarded, RCRA ID characteristic Toxic Hazardous Waste D007.

Residues from welding consumables and processes could degrade and accumulate in soils and groundwater. Welding slag from these products typically contain mainly the following components originating from the coating of the electrode: Fe, O, Mn, Zr, Cr, Ni, F, Na, Si, K, Ca, Cu, Mo, V, Mg, and Ti.

## 14. TRANSPORT INFORMATION

No international regulations or restrictions are applicable.

## 15. REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

WARNING: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation.

ELECTRIC SHOCK can kill.

ARC RAYS and SPARKS can injure eyes and burn skin.

Wear correct hand, head, eye and body protection.

Canada: WHMIS classification: Class D; Division 2, Subdivision A

Canadian Environmental Protection Act (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

**USA:** Under the OSHA Hazard Communication Standard, these products are considered hazardous. These products contain or produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code § 25249.5 et seq.)  
United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

**CERCLA/SARA Title III**

Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

Ingredient name	RQ (lb)	TPQ (lb)
Product is a solid solution in the form of a solid article.	--	--

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

**Section 311 Hazard Class**

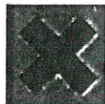
As shipped: Immediate In use: Immediate delayed

**EPCRA/SARA Title III 313 Toxic Chemicals**

The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.

Ingredient name	Disclosure threshold
Chromium	1.0% de minimis concentration
Copper	1.0% de minimis concentration
Manganese	1.0% de minimis concentration
Nickel	0.1% de minimis concentration

According to EC Directive 88/379/EEC, some of these products are classified with the following risk and safety phrases due to their content of nickel:

**Symbols:****Harmful:**

**R-phrases:** R40 – Limited evidence of a carcinogenic effect.  
R43 – May cause sensitization by skin contact.

**S-phrases:** S2 – Keep out of the reach of children.  
S22 – Do not breathe dust.  
S36 – Wear suitable protective clothing.

**16. OTHER INFORMATION**

This Safety Data Sheet has been revised due to modifications to several paragraphs and/or new format. This SDS supersedes 7970-V. Refer to ESAB "Welding and Cutting - Risks and Measures", F52-529 "Precautions and Safe Practices for Electric Welding and Cutting" and F2035 "Precautions and Safe Practices for Gas Welding, Cutting and Heating" available from ESAB, and to:

**USA:** Contact ESAB at [www.esabna.com](http://www.esabna.com) or 1-800-ESAB-123 if you have questions about this SDS.

American National Standard Z49.1 "Safety in Welding and Cutting", ANSI/AWS F1.5 "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", American Welding Society, 550 North Le Jeune Road, Miami, Florida, 33135. Safety and Health Fact Sheets available from AWS at [www.aws.org](http://www.aws.org).

OSHA Publication 2206 (29 C.F.R. 1910). U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.

American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

**UK:** WMA Publication 236 and 237, "Hazards from Welding Fume", "The arc welder at work, some general aspects of health and safety".

**Germany:** Unfallverhütungsvorschrift BGV D1, "Schweißen, Schneiden und verwandte Verfahren".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes".

These products have been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

- R-phrases: R15 – Contact with water liberates extremely flammable gases.  
R17 – Spontaneously flammable in air.  
R40 – Limited evidence of a carcinogenic effect.  
R43 – May cause sensitization by skin contact.  
R45 – May cause cancer.

ESAB requests the users of these products to study this Safety Data Sheet (SDS) and become aware of product hazards and safety information. To promote safe use of these products a user should:

- notify its employees, agents and contractors of the information on this SDS and any product hazards/safety information.
- furnish this same information to each of its customers for these products.
- request such customers to notify employees and customers for the same product hazards and safety information.

The information herein is given in good faith and based on technical data that ESAB believes to be reliable. Since the conditions of use are outside our control, we assume no liability in connection with any use of this information and no warranty, expressed or implied is given. Contact ESAB for more information.


# SAFETY DATA SHEET

## Acetylene

### Section 1. Identification

<b>GHS product identifier</b>	: Acetylene
<b>Chemical name</b>	: acetylene
<b>Other means of identification</b>	: Ethyne; Ethine; Narcylen; C <sub>2</sub> H <sub>2</sub> ; Acetylen; UN 1001; Vinylene
<b>Product type</b>	: Gas.
<b>Product use</b>	: Synthetic/Analytical chemistry.
<b>Synonym</b>	: Ethyne; Ethine; Narcylen; C <sub>2</sub> H <sub>2</sub> ; Acetylen; UN 1001; Vinylene
<b>SDS #</b>	: 001001
<b>Supplier's details</b>	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253 Inside the US: 1-800-424-9300 (Chemtrec, 24 hours) Outside the US: 1-703-527-3887 (Chemtrec, 24 hours)
<b>24-hour telephone</b>	: Airgas Emergency Response Center 1-866-734-3438

### Section 2. Hazards identification

<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	: FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas
<b>GHS label elements</b>	
<b>Hazard pictograms</b>	: 
<b>Signal word</b>	: Danger
<b>Hazard statements</b>	: H220 - Extremely flammable gas. H280 - Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation. May form explosive mixtures with air.
<b>Precautionary statements</b>	
<b>General</b>	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. 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 15psig (103kpa). Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Approach suspected leak area with caution.
<b>Prevention</b>	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>Response</b>	: P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - In case of leakage, eliminate all ignition sources.
<b>Storage</b>	: P410 + P403 - Protect from sunlight. Store in a well-ventilated place.
<b>Disposal</b>	: Not applicable.
<b>Hazards not otherwise classified</b>	: In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Substance
<b>Chemical name</b>	: acetylene
<b>Other means of identification</b>	: Ethyne; Ethine; Narcylen; C <sub>2</sub> H <sub>2</sub> ; Acetylen; UN 1001; Vinylene
<b>Product code</b>	: 001001

Ingredient name	%	CAS number
Acetylene	100	74-86-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
<b>Inhalation</b>	: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Skin contact</b>	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur.
<b>Ingestion</b>	: As this product is a gas, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: Contact with rapidly expanding gas may cause burns or frostbite.
<b>Inhalation</b>	: No known significant effects or critical hazards.
<b>Skin contact</b>	: Contact with rapidly expanding gas may cause burns or frostbite.
<b>Frostbite</b>	: Try to warm up the frozen tissues and seek medical attention.
<b>Ingestion</b>	: As this product is a gas, refer to the inhalation section.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	: No specific data.
<b>Inhalation</b>	: No specific data.
<b>Skin contact</b>	: No specific data.
<b>Ingestion</b>	: No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: No specific treatment.
<b>Protection of first-aiders</b>	: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

**Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.  
Use only non-sparking tools. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

## Section 7. Handling and storage

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use. 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 (125 °F).

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Acetylene	<b>California PEL for Chemical Contaminants ( Table AC-1) (United States)</b> Oxygen depletion [asphyxiant].

#### Biological exposure indices

No exposure indices known.

**Appropriate 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 explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Skin protection

**Hand protection** : Chemical-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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

## Section 8. Exposure controls/personal protection

- Body protection** : 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures 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 protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. 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.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Gas.
- Color** : Colorless.
- Odor** : Mild. Ethereal.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : -81°C (-113.8°F)
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Closed cup: -18.15°C (-0.67°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.  
Highly flammable in the presence of the following materials or conditions: heat.
- Lower and upper explosive (flammable) limits** : Lower: 2.5%  
Upper: 100%
- Vapor pressure** : 635 (psig)
- Relative vapor density** : 0.907 [Air = 1]
- Specific Volume (ft<sup>3</sup>/lb)** : 14.7508
- Gas Density (lb/ft<sup>3</sup>)** : 0.0691
- Relative density** : Not applicable.
- Solubility in water** : 1.2 g/l
- Partition coefficient: n-octanol/water** : 0.37
- Auto-ignition temperature** : 305°C (581°F)
- Decomposition temperature** : Not available.
- Flow time (ISO 2431)** : Not available.
- Molecular weight** : 26.04 g/mole
- Aerosol product**
- Heat of combustion** : -48257522 J/kg

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Oxidizers
- 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

### Information on toxicological effects

#### Acute toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Skin corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Serious eye damage/eye irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Respiratory corrosion/irritation

Not available.

**Conclusion/Summary [Product]** : Not available.

#### Respiratory or skin sensitization

Not available.

#### **Skin**

**Conclusion/Summary [Product]** : Not available.

#### **Respiratory**

**Conclusion/Summary [Product]** : Not available.

## Section 11. Toxicological information

### Germ cell mutagenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Carcinogenicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Reproductive toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Not available.

### Potential acute health effects

- Eye contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Contact with rapidly expanding gas may cause burns or frostbite.
- Ingestion** : As this product is a gas, refer to the inhalation section.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

## Section 11. Toxicological information

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**Conclusion/Summary [Product]** : Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

N/A

## Section 12. Ecological information

### Toxicity

Not available.

**Conclusion/Summary [Product]** : Not available.

### Persistence and degradability

Not available.

**Conclusion/Summary [Product]** : Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Acetylene	0.37	-	Low

### Mobility in soil

**Soil/Water partition coefficient** : Not available.






### Other adverse effects

No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

## Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
<b>UN number</b>	UN1001	UN1001	UN1001	UN1001	UN1001
<b>UN proper shipping name</b>	Acetylene, dissolved	ACETYLENE, DISSOLVED	ACETILENO DISUELTO	ACETYLENE, DISSOLVED	Acetylene, dissolved
<b>Transport hazard class(es)</b>	2.1 	2.1 	2.1 	2.1 	2.1 
<b>Packing group</b>	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	No.

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

### Additional information

#### DOT Classification

- : **Limited quantity** No.
- : **Packaging instruction** Exceptions: None. Non-bulk: 303. Bulk: None.
- : **Quantity limitation** Passenger aircraft/rail: Forbidden. Cargo aircraft: 15 kg.
- : **Special provisions** N86, N88

#### TDG Classification

- : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
- : **Explosive Limit and Limited Quantity Index** 0
- : **Passenger Carrying Vessel Index** 75
- : **Passenger Carrying Road or Rail Index** Forbidden
- : **Special provisions** 38

#### IMDG

- : **Emergency schedules** \_F-D\_, \_S-U\_

#### IATA

- : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Packaging instructions: Forbidden. Cargo Aircraft Only: 15 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.
- : **Special provisions** A1

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not available.

## Section 15. Regulatory information

### U.S. Federal regulations

- : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
- : **Clean Air Act (CAA) 112 regulated flammable substances:** acetylene

### TSCA 12(b) - Chemical export notification

Not applicable.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

## Section 15. Regulatory information

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

### State regulations

**Massachusetts** : This material is listed.

**New York** : This material is not listed.

**New Jersey** : This material is listed.

**Pennsylvania** : This material is listed.

### California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

**Australia** : This material is listed or exempted.

**Canada** : This material is listed or exempted.

**China** : This material is listed or exempted.

**Eurasian Economic Union** : **Russian Federation inventory**: Not determined.

**Japan** : **Japan inventory (CSCL)**: This material is listed or exempted.  
**Japan inventory (ISHL)**: Not determined.

**New Zealand** : This material is listed or exempted.

**Philippines** : This material is listed or exempted.

**Republic of Korea** : This material is listed or exempted.

**Taiwan** : This material is listed or exempted.

**Thailand** : This material is listed or exempted.

**Turkey** : This material is listed or exempted.

**United States** : This material is active or exempted.

**Viet Nam** : This material is listed or exempted.

## Section 16. Other information

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

Health	/	0
Flammability		4
Physical hazards		3

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

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



Note: The instability hazard rating for acetylene, dissolved (stabilized acetylene) is 2.

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas	Expert judgment According to package

### History

Date of printing : 3/28/2025

Date of issue/Date of revision : 3/28/2025

Date of previous issue : 3/17/2025

Version : 5.05

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

References : Not available.

### Notice to reader

## Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.