

Safety Data Sheet



Division of Fresno Oxygen



Barnes Welding Supply/Barnes Specialty Gases

Division of Fresno Oxygen

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Document #: G-242

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Section 1: Product and Company Identification

Barnes Welding Supply / Barnes Specialty Gases - Division of Fresno Oxygen

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FOR CHEMICAL EMERGENCIES DURING TRANSPORTATION ONLY CALL INFOTRAC 1-800-535-5053

Product Name: Ethylene in

Air Part Number: C2H2 in Air

Synonyms: Non-Flammable Gas Mixture Ethylene & Air Calibration Gas Ethene in Air
Recommended Use: For general analytical/synthetic chemical gas uses.

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure
Specific target organ toxicity (Single Exposure) (Category 3)

Hazard Statements:

Contains gas under pressure; may explode if heated
May cause respiratory irritation;

Precautionary Statements

Prevention:
Use only outdoors or in a well-ventilated area.
Avoid breathing dust/fume/gas/mist/ vapors/spray.
[In case of inadequate ventilation] wear respiratory protection.

Response:

Call a poison center or doctor if you feel unwell.
If inhaled: Remove person to fresh air and keep comfortable for breathing.

Storage:

Store locked up.
Protect from sunlight.
Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents and/or container in accordance with applicable regulations.

Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Air	Not applicable	99%
Ethylene	74-85-1	1%

	Chemical Substance	Chemical Family	Trade Names
Air	AIR, COMPRESSED	Inorganic gases	AIR; UN 1002 Nitrogen CAS: 7727-37-9 Oxygen CAS: 7782-44-7
Ethylene	Ethylene	Hydrocarbons, Aliphatic, Unsaturated	ACETENE; ETHENE; ETHYLENE, COMPRESSED GAS; OLEFIANT GAS; BICARBURETTED HYDROGEN; UN 1962; C2H4

Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Air	Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Get medical attention.	

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Ethylene	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Do not induce vomiting. Seek immediate medical attention. Check for frostbite. Thaw frostbite slowly with lukewarm water. Avoid mouth-to-mouth contact by using a mouth shield or guard to perform artificial respiration.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Air	Use extinguishing agents appropriate for surrounding fire.		No respirator is required under normal conditions of use.
Ethylene	Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.	Carbon monoxide, carbon dioxide and toxic and irritating fumes	Any self-contained breathing apparatus with a full facepiece. Any self-contained breathing apparatus with a full facepiece.

Section 6: Accidental Release Measures

	Personal Precautions	Environmental Precautions	Methods for Containment
Air			Stop leak if possible without personal risk.
Ethylene	Keep unnecessary people away, isolate hazard area and deny entry. Do not touch spilled material. Ventilate closed spaces before entering.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition.

	Methods for Cleanup	Other Information
Air		
Ethylene	Avoid ignition sources. Evacuate area, contact emergency personnel. Use fine water spray.	None

Section 7: Handling and Storage

	Handling	Storage
Air	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	
Ethylene	Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store in a cool, dry place. Store in a well-ventilated area. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Avoid heat, flames, sparks and other sources of ignition. Grounding and bonding required.

Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
Air	AIR, COMPRESSED: No occupational exposure limits established.
Ethylene	TLV-TWA: 200ppm Carcinogenicity Designation A4 (ACGIH)

Engineering Controls

Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
Air	Eye protection not required under normal conditions.	Protective clothing is not required under normal conditions.	No respirator is required under normal conditions of use.
Ethylene	For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Any self-contained breathing apparatus with a full facepiece.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

	Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Air	Gas	Clear	Colorless		Gas	Not available	
Ethylene	Gas	Colorless	Colorless	N/A	Compressed gas	Sweet odor	Sweet taste

	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Air						
Ethylene	Approximately -212.8 F (-136 C) (CC); extremely flammable gas	Not available	281.84 (log = 2.45) (estimated from water solubility)	842 F (450 C)	0.36	0.027

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
Air	-317 F (-194 C)	Not available	760 mmHg @ -194 C	1	Not applicable	Slightly soluble	Not applicable	Not available	Not applicable	0.01853 cP @ 26.85 C
Ethylene	-155 F (-104 C)	-272 F (-169 C)	760 mmHg @ -104 C	0.978 @ 0 C; 0.969 @ 21.1 C (air = 1)	Not applicable	0.226	Not applicable	Wide range of reported values: 17 to 959 ppm. Acceptable values are: 270 ppm (310 mg/m3) (detection); 418 ppm (480 mg/m3) (recognition)	Not applicable	LIQUEFIED GAS: 0.16 mPa.s (0.16 centipoise) @ -100 C (18); 0.07 mPa.s (0.07 centipoise) @ 0 C

	Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
Air			1.29 g/L @ 0 C			Not applicable	Slightly Soluble
Ethylene	28.05	C-H2-C-H2	1.261 g/L @ 0 C	Not available	100%	1	Soluble: Alcohol, ether, acetone, benzene

Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
Air	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	None known
Ethylene	May polymerize. Avoid storage and use above room temperature.	May polymerize. Avoid storage and use above room temperature.	Acids, metal salts, halogens, halo carbons, oxidizing materials, metals, peroxides, chlorine, aluminum chloride, nitrogen dioxide or ozone, copper, 5A molecular sieves

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
Air	No hazard expected.	Will not polymerize.
Ethylene	Carbon monoxide, carbon dioxide, hydrocarbons	Polymerizes with evolution of heat. Store in a cool, dry place.

Section 11: Toxicology Information

Acute Effects

	Oral LD50	Dermal LD50	Inhalation
Air	Not available	Not available	
Ethylene	LC50 (inhalation, mouse) = 96 pph	Not available	Nausea, vomiting, symptoms of drunkenness, bluish skin color, suffocation, convulsions, coma

	Eye Irritation	Skin Irritation	Sensitization
Air	No information is available	No information is available	No significant target effects reported.
Ethylene	Frostbite, blurred vision	Blisters, frostbite	Specific Target Organ Toxicity (single exposure), Category 3; H336: May cause drowsiness or dizziness.

Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Air	Not available	Not available	No data	No data
Ethylene	IARC: Human Inadequate Evidence, Animal Inadequate Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Air	Fish toxicity: Not available	Not available	Not available	Not available
Ethylene	Fish toxicity: 22000-25000 ug/L 1 day(s) LC100 (Mortality) Orangespotted sunfish (Lepomis humilis) Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Lemon = 0.025-0.05; epinasty Other toxicity: Tomato = 0.04-0.1 ppm/3-48 hours; leaf epinasty.	Relatively non-persistent in the environment. Moderately volatile from water.	Accumulates very little in the bodies of living organisms.	Leaches through the soil or the sediment at a slow rate.

Section 13: Disposal Considerations

Air	Dispose in accordance with all applicable regulations.
Ethylene	Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

DOT Information For This Mixture

Shipping Name	Compressed gas, n.o.s. (Air, Ethylene)
UN Number	UN1956
Hazard Class	2.2
Hazard Information	Non-Flammable Gas

Individual Component Information

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Air	Air, compressed	UN1002	2.2	Not available	2.2	Not available	Not available	Not available
Ethylene	Ethylene	UN1962	2.1	Not applicable	2.1	Forbidden	150 kg	N/A

Canadian Transportation of Dangerous Goods

	Shipping Name	UN Number	Class	Packing Group / Risk Group
Air	Air, compressed	UN1002	2.2	Not available
Ethylene	Ethylene, compressed	UN1962	2.1	Not applicable

Section 15: Regulatory Information

U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
Air	Not regulated.	Not regulated.	Not regulated.
Ethylene	Not regulated.	Not regulated.	Not regulated.

ARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Air	No	No	No	No	Yes
Ethylene	Yes	No	Yes	Yes	Yes

SARA 372.65

Air	Not regulated.
Ethylene	ETHYLENE

OSHA Process Safety

Air	Not regulated.
Ethylene	Not regulated.

State Regulations

	CA Proposition 65
Air	Not regulated.
Ethylene	Not regulated.

Canadian Regulations

	WHMIS Classification
Air	A
Ethylene	A, B1, D2B

National Inventory Status

	US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Air	Not listed on inventory.	Not listed.	Not determined.
Ethylene	Listed on inventory.	Not listed.	Listed on inventory.

Section 16: Other Information

	NFPA Rating
Air	HEALTH=0 FIRE=0 REACTIVITY=0
Ethylene	HEALTH=2 FIRE=4 REACTIVITY=2

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard