

Flammable Gas Mixture

Material Safety Data Sheet

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ISSUE DATE	Issued: 3 April 1978	TRADE NAME AND SYNONYMS Dependent upon components.	CHEMICAL NAME AND SYNONYMS Dependent upon components.
REVISIONS	Rev: 1 June 1990	FORMULA Dependent upon components.	CHEMICAL FAMILY Flammable gas mixtures.

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

The threshold limit value (TLV) of flammable gas mixtures is dependent upon the TLV of each mixture component.

SYMPTOMS IF INGESTED, CONTACTED WITH SKIN, OR VAPOR INHALED

Symptoms of exposure will be dependent upon each component of the mixture. Symptoms of anoxia may occur if the gas mixture is present in quantities sufficient to dilute the oxygen concentration in air. These symptoms may occur when the gas concentration is within the flammable range and the mixture has not ignited, **DO NOT ENTER AREAS WITHIN THE FLAMMABLE RANGE DUE TO THE IMMEDIATE FIRE AND EXPLOSION HAZARD.** Use a suitable flammable gas meter (explosimeter) calibrated for the flammable gas component to measure concentrations of the gas in air. Toxic components, if present in the mixture, may cause additional symptoms. Consult the Material Safety Data Sheet (MSDS) for each component in the mixture prior to use.

TOXICOLOGICAL PROPERTIES

Flammable gas mixtures may be toxic, depending on the toxicological properties of the individual components. They may also act as simple asphyxiants by displacing the amount of oxygen in air necessary to support life. Consult the MSDS for each component in the mixture for additional information on toxicological properties.

RECOMMENDED FIRST AID TREATMENT

Persons suffering from lack of oxygen should be moved to areas with normal atmospheres. Assisted respiration and supplemental oxygen should be given if the victim is not breathing. First degree burns (reddening only, as sunburn) or second degree burns (blistering) which are localized to a portion of an extremity or other small area of the body may be immersed in cool water for 10–20 minutes to relieve pain. Do NOT immerse the whole body in a cold bath. All thermal injuries except the most minor and localized burns should be referred promptly for medical care. Burned areas should be covered with the cleanest available material, such as a clean sheet, prior to transport. Do NOT use burn ointments or greasy materials on burns which show more than localized reddening. Other first aid treatment may be necessary depending on the toxicological properties of the individual components. Consult the MSDS for each component in the mixture.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) N/A (gas at normal temperatures)	AUTO IGNITION TEMP Dependent upon components	FLAMMABLE LIMITS Dependent upon components	LEL	UEL
EXTINGUISHING MEDIA Dry chemical carbon dioxide or Halon			ELECTRICAL CLASSIFICATION GROUP Dependent upon components.	
SPECIAL FIRE FIGHTING PROCEDURES Shut off source of flammable gas. When possible allow fire to burn itself out to avoid accumulation of an unburned flammable mixture. Cool adjoining equipment and cylinders with a water spray. Keep personnel away since containers can rupture violently when exposed to fire.				
UNUSUAL FIRE AND EXPLOSION HAZARDS Flammable gas mixtures may consist of a flammable component diluted in a nonflammable component. The resulting mixture has a smaller flammability range than the pure flammable component itself.				
<h3>PHYSICAL DATA</h3>				
BOILING POINT (°F.) Dependent upon mixture components.		FREEZING POINT (°F.) Dependent upon mixture components.		
VAPOR PRESSURE (psia) Dependent upon mixture components.		SOLUBILITY IN WATER Dependent upon mixture components.		
VAPOR DENSITY (lb/cu ft) Dependent upon mixture components.	SPECIFIC GRAVITY (AIR = 1) Dependent upon mixture components.	LIQUID DENSITY (lb/cu ft) Dependent upon mixture components.	SPECIFIC GRAVITY (H ₂ O = 1) Dependent upon mixture components.	
APPEARANCE AND ODOR Dependent upon mixture components.				

REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Consult MSDS for each component

INCOMPATIBILITY (Materials to avoid)
 Oxidizers such as oxygen, chlorine or fluorine. Consult MSDS for each component

HAZARDOUS DECOMPOSITION PRODUCTS
 None

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	None

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
 Remove sources of ignition, heat, sparks, etc. Ventilate enclosed areas to prevent formation of flammable or oxygen-deficient atmospheres. Do not enter areas with a flammable atmosphere. Carefully remove cylinders with slow leaks to a remote, outdoor location. Contact Air Products for assistance.

WASTE DISPOSAL METHOD
 Do not attempt to dispose of residual gas in cylinders. Return cylinders to Air Products with positive residual pressure, cylinder valve tightly closed, and valve cap in place.

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)
 Use self-contained breathing apparatus in oxygen-deficient atmospheres only when the atmosphere is not flammable. Caution! Air purifying respirators will not function; their use may result in asphyxiation.

VENTILATION Natural or mechanical where gas is present.	LOCAL EXHAUST	SPECIAL Consult the National Electric Code (NEC) for the group requirements which may be necessary for the particular flammable component.
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES
 Leather work gloves are recommended for handling compressed gas cylinders.

EYE PROTECTION
 Safety glasses are recommended for handling cylinders. Gases used in welding applications may require the use of welder's goggles, etc.

OTHER PROTECTIVE EQUIPMENT
 Leather sleeves, leather apron and other standard protective equipment may be required for cutting and welding.

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION
 DOT Hazard Class: Flammable Gas. Dot Shipping Label: Flammable Gas. I.D. Number: UN 1954.

SPECIAL HANDLING RECOMMENDATIONS
 Use only in well ventilated areas. Flammable gas mixtures are stored in cylinders at high pressure and should be handled with care. Use a pressure-reducing regulator when connecting to lower pressure equipment and piping systems. Always keep cylinders upright and secured when in use. Never expose a compressed gas cylinder to heat. Always open and close cylinder valves slowly. Return empty cylinders to Air Products with positive pressure and cylinder valve closed. Avoid dragging, rolling, or sliding cylinders, even for a short distance. Use a suitable hand truck. For additional handling recommendations on compressed gas cylinders, consult Compressed Gas Association Pamphlet P-1.

SPECIAL STORAGE RECOMMENDATIONS
 Keep cylinders away from source of heat. Storage should not be in heavy traffic areas to prevent accidental knocking over or damage from passing or falling objects. Valve caps should remain on cylinders not connected for use. Segregate full and empty cylinders. Keep flammable gas cylinder storage areas away from storage of oxygen and other oxidizers. Storage areas should be free of combustible material. Avoid exposure to areas where salt or other corrosive chemicals are present. Store compressed gas cylinders with the valve end up. See Compressed Gas Association Pamphlet P-1 for additional storage recommendations.

SPECIAL PACKAGING RECOMMENDATIONS
 Flammable gas mixtures are stored and shipped in compressed gas cylinders meeting DOT specifications.

OTHER RECOMMENDATIONS OR PRECAUTIONS
 The properties of compressed gas mixtures are dependent upon the properties and concentrations of the individual components. For additional information on specific component gases in a flammable gas mixture, consult the individual Material Safety Data Sheet for each component. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder filled without the permission of the owner is a violation of Federal Law.

*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that s/he is in full compliance.