

# SAFETY DATA SHEET

Version 1.0  
Revision Date 26.04.2013

MSDS Number 300000039870  
Print Date 26.02.2015

## SECTION 1: Identification of the substance/mixture and the company/undertaking

Product identifier : Mixture of Gases

Refer to Section 3 for REACH information

Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : General Industrial

Restrictions on Use : No data available.

Details of the supplier of the safety data sheet : Air Products and Chemicals, Inc  
7201 Hamilton Blvd.  
Allentown, PA 18195-1501  
GST No. 123600835 RT0001  
QST No. 102753981 TQ0001

Email Address – Technical Information : GASTECH@airproducts.com

Telephone : 1-610-481-4911

Emergency telephone number (24h) : 800-523-9374 USA  
+1 610 481 7711 International

## SECTION 2: Hazards identification

Classification according to Regulation 1272/2008 (CLP)  
Not a dangerous substance/mixture according to the CLP

Classification (Directive)

Not a hazardous substance or preparation according to EC-directives  
67/548/EEC or 1999/45/EC.  
No EC labelling required.

Label Elements according to Regulation 1272/2008 (CLP)

Signal Word: Not applicable.

Hazard Statements:  
Not applicable.

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## Other hazards

This product may be flammable. Refer to the user classification in Section 2 of the SDS to determine if this product is flammable for use. If so, please take the appropriate safety precautions to ensure the product is used and stored safely.

High pressure gas.

Can cause rapid suffocation.

Self contained breathing apparatus (SCBA) may be required.

## Environmental Effects

Not harmful.

## SECTION 3: Composition/information on ingredients

Substance/Mixture : Mixture

Components	EINECS / ELINCS Number	CAS Number	Concentration (Volume)
Hydrogen	215-605-7	1333-74-0	1,6 %
Oxygen	231-956-9	7782-44-7	20,9 %
Nitrogen	231-783-9	7727-37-9	77,5 %

Components	Classification (Directive)	Classification (CLP)	REACH Reg. #
Hydrogen	F+ R12	Flam. gas 1 ;H220 Press. Gas (Comp.) ;H280	
Oxygen	O R 8	Ox. Gas 1 ;H270 Press. Gas (Comp.) ;H280	
Nitrogen		Press. Gas (Comp.) ;H280	

If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration, or the registration date has not yet come due.

Refer to section 16 for full text of each relevant R-phrase and H-phrases.

Concentration is nominal. For the exact product composition, please refer to Air Products technical specifications.

## SECTION 4: First aid measures

### Description of first aid measures

General advice : Remove from exposure, lie down.

Eye contact : Not applicable.

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- Skin contact : Not applicable.
- Ingestion : Ingestion is not considered a potential route of exposure.
- Inhalation : Remove to fresh air. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. In case of shortness of breath, give oxygen.

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

- Symptoms : Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

## Indication of any immediate medical attention and special treatment needed

No data available.

## SECTION 5: Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : All known extinguishing media can be used.

- Extinguishing media which must not be used for safety reasons. : No data available.

- Special hazards arising from the substance or mixture : Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is nonflammable and does not support combustion. Move away from container and cool with water from a protected position. Keep containers and surroundings cool with water spray.

- Advice for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.

- Further information : No data available.

## SECTION 6: Accidental release measures

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.

- Environmental precautions : Do not discharge into any place where its accumulation could be dangerous. Prevent further leakage or spillage if safe to do so.

- Methods and material for containment and cleaning : Ventilate the area.

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Additional advice : If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If the leak is in the user's system, close the cylinder valve and safely vent the pressure before attempting repairs.

## SECTION 7: Handling and storage

### Precautions for safe handling

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases/cryogenic liquids. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves. Close container valve after each use and when empty, even if still connected to equipment. Close valve after each use and when empty. Do not subject containers to abnormal mechanical shock. Do not smoke while handling product or cylinders. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F). Prolonged periods of cold temperature below -30°C (-20°F) should be avoided.

### Conditions for safe storage, including any incompatibilities

Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Do not allow storage temperature to exceed 50°C (122°F).

### Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material.

### Specific end use(s)

Refer to section 1 or the extended SDS if applicable

## SECTION 8: Exposure controls / personal protection

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## Control parameters

If applicable, refer to the extended section of the SDS for further information on CSA.

## Exposure controls

### Engineering measures

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

### Personal protective equipment

- |   |   |
|---|---|
| Respiratory protection                          | : Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere.<br>Air purifying respirators will not provide protection. Users of breathing apparatus must be trained. |
| Hand protection                                 | : Sturdy work gloves are recommended for handling cylinders.<br>The breakthrough time of the selected glove(s) must be greater than the intended use period.  |
| Eye protection                                  | : Safety glasses recommended when handling cylinders.   |
| Skin and body protection                        | : Safety shoes are recommended when handling cylinders.   |
| Special instructions for protection and hygiene | : Ensure adequate ventilation, especially in confined areas.  |
| Remarks   | : Simple asphyxiant.  |

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

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|--|--|
| Appearance                               | : Aerosol. Colorless.                          |
| Odor                                     | : No odor warning properties.                  |
| Odor threshold                           | : No data available.                           |
| pH                                       | : No data available.                           |
| Melting point/range                      | : No data available.                           |
| Boiling point/range                      | : No data available.                           |
| Flash point                              | : No data available.                           |
| Evaporation rate                         | : No data available.                           |
| Flammability (solid, gas)                | : Refer to product classification in Section 2 |
| Upper/lower explosion/flammability limit | : No data available.                           |

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Vapor pressure	: No data available.
Water solubility	: No data available.
Relative vapor density	: No data available.
Relative density	: No data available.
Partition coefficient (n-octanol/water)	: No data available.
Autoignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Explosive properties	: No data available.
Oxidizing properties	: No data available.

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## SECTION 10: Stability and reactivity

Reactivity	: Refer to possibility of hazardous reactions and/or incompatible materials sections
Chemical Stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No data available.
Conditions to avoid	: No data available.
Incompatible materials	: No data available.
Hazardous decomposition products	: None.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Likely routes of exposure

Effects on Eye	: No adverse effect.
Effects on Skin	: No adverse effect.
Inhalation Effects	: In high concentrations may cause asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

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Ingestion Effects : Ingestion is not considered a potential route of exposure.

Symptoms : Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

## Acute toxicity

Acute Oral Toxicity : No data is available on the product itself.

Inhalation : No data is available on the product itself.

Acute Dermal Toxicity : No data is available on the product itself.

Skin corrosion/irritation : No data available.

Serious eye damage/eye irritation : No data available.

Sensitization. : No data available.

## Chronic toxicity or effects from long term exposures

Carcinogenicity : No data available.

Reproductive toxicity : No data is available on the product itself.

Germ cell mutagenicity : No data is available on the product itself.

Specific target organ systemic toxicity (single exposure) : No data available.

Specific target organ systemic toxicity (repeated exposure) : No data available.

Aspiration hazard : No data available.

## SECTION 12: Ecological information

### Toxicity

Aquatic toxicity : No data is available on the product itself.

Toxicity to other organisms : No data is available on the product itself.

### Persistence and degradability

No data available.

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## Bioaccumulative potential

No data is available on the product itself.

## Mobility in soil

No data available.

## Results of PBT and vPvB assessment

If applicable, refer to the extended section of the SDS for further information on CSA.

## Other adverse effects

No data available.

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## SECTION 13: Disposal considerations

Waste treatment methods : Ensure all national/local regulations are observed. Contact supplier if guidance is required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

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## SECTION 14: Transport information

### ADR

UN/ID No. : UN1950  
Proper shipping name : AEROSOLS  
Class or Division : 2  
Tunnel Code : (E)  
Label(s) : 2.2  
Marine Pollutant : No

### IATA

UN/ID No. : UN1950  
Proper shipping name : Aerosols, non-flammable  
Class or Division : 2.2  
Label(s) : 2.2  
Marine Pollutant : No

### IMDG

UN/ID No. : UN1950  
Proper shipping name : AEROSOLS  
Class or Division : 2.2  
Label(s) : 2.2  
Marine Pollutant : No



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## RID

UN/ID No. : UN1950  
Proper shipping name : AEROSOLS  
Class or Division : 2  
Label(s) : 2.2  
Marine Pollutant : No

### Further Information

The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact an Air Products customer service representative.

## SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

WGK Identification Number: : Not water endangering.

## Chemical Safety Assessment

Refer to extended SDS for CSA information

If this product does not contain exposure scenarios, the components in this product are either exempt from REACH, do not meet the minimum volume threshold for a CSA, or the CSA has not yet been completed.

## SECTION 16: Other information

Ensure all national/local regulations are observed.

R-phrases - Components

R 8 Contact with combustible material may cause fire.  
R12 Extremely flammable.

Hazard Statements:

H220 Extremely flammable gas.  
H270 May cause or intensify fire; oxidiser.  
H280 Contains gas under pressure; may explode if heated.

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

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For additional information, please visit our Product Stewardship web site at  
<http://www.airproducts.com/productstewardship/>

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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