

Material Safety Data Sheet

Non - flammable gas mixture

1. Product and company identification

Product name	: Non - flammable gas mixture
Material uses	: Analytical chemistry. 30AL aluminum cylinder, 144 cubic feet of gas blend
Supplier/Manufacturer	: Agilent Technologies, Inc. Logistics Center - Americas 500 Ships Landing Way New Castle, Delaware 19720 800-227-9770
Part No.	: G2933-85193, 196000107
Validation date	: 06/13/2012
In case of emergency	: Chemtrec: 1-800-424-9300

2. Hazards identification

Physical state	: Gas.
Odor	: Odorless.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview

Signal word	: CAUTION!
Hazard statements	: HIGH PRESSURE GAS. GAS REDUCES OXYGEN AVAILABLE FOR BREATHING. AT VERY HIGH CONCENTRATIONS, CAN DISPLACE THE NORMAL AIR AND CAUSE SUFFOCATION FROM LACK OF OXYGEN. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Precautions	: Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode. At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen. Do not puncture or incinerate container. Do not enter storage areas and confined spaces unless adequately ventilated. Do not breathe gas. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.

Potential acute health effects

Inhalation	: At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.
Ingestion	: As this product is a gas, refer to the inhalation section.
Skin	: Contact with rapidly expanding gas may cause burns or frostbite.
Eyes	: Contact with rapidly expanding gas may cause burns or frostbite.

Potential chronic health effects

Chronic effects	: Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which may cause damage to the following organs: lungs.

Over-exposure signs/symptoms

Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: No specific data.

2. Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Helium	7440-59-7	60 - 100

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.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : As this product is a gas, refer to the inhalation section.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

- Flammability of the product** : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : 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.
- Hazardous thermal decomposition products** : No specific data.
- 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.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- 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).

6. Accidental release measures

Methods for cleaning up : Immediately contact emergency personnel. Stop leak if without risk.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). 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. Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container.
- Storage** : Do not store above the following temperature: 52°C (125.6°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use.

8. Exposure controls/personal protection

Ingredient

No exposure limit value known.

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : 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.
- 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.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. If operating conditions cause high gas concentrations to be produced or any recommended or statutory exposure limit is exceeded, use an air-fed respirator or self-contained breathing apparatus. The gas can cause asphyxiation without warning by replacing the oxygen in the air. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : 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.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- 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.
- Other protection** : Not available.

9. Physical and chemical properties

Physical state	: Gas.
Flash point	: Not available.
Auto-ignition temperature	: Not available.
Flammable limits	: Not available.
Color	: Colorless.
Odor	: Odorless.
pH	: Not available.
Boiling/condensation point	: -268.9°C (-452°F)
Melting/freezing point	: Not available.
Specific gravity	: 0.1381 [Air = 1]
Vapor pressure	: Not available.
Vapor density	: Not available.
Odor threshold	: Not available.
Evaporation rate	: Not available.
Solubility	: Very slightly soluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability	: The product is stable.
Conditions to avoid	: Do not allow gas to accumulate in low or confined areas.
Materials to avoid	: Not available.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

12. Ecological information

Ecotoxicity	: May cause long-term adverse effects in the aquatic environment.
Other adverse effects	: No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal	: The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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.
-----------------------	--




13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT	UN1956	Compressed gas, n.o.s. (Helium)	2.2	-		<p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: 75 kg</p> <p>Cargo aircraft Quantity limitation: 150 kg</p> <p>Special provisions 77</p>
IMDG	UN1956	COMPRESSED GAS, N.O.S. (Helium)	2.2	-		<p>Emergency schedules (EmS) F-C, S-V</p>
IATA	UN1956	Compressed gas, n.o.s. (Helium)	2.2	-		<p>Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 200</p> <p>Cargo Aircraft Only Quantity limitation: 150 kg Packaging instructions: 200</p> <p>Limited Quantities - Passenger Aircraft Quantity limitation: Forbidden Packaging instructions: Forbidden</p>

PG* : Packing group

15. Regulatory information

HCS Classification : Compressed gas
Target organ effects

U.S. Federal regulations : **TSCA 8(a) PAIR**: 2-Ethoxy-2-methylpropane; 2-Methoxy-2-methylbutane; Butan-2-ol; 2-Methylpropan-2-ol
TSCA 8(a) IUR: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Helium
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Helium:
Sudden release of pressure

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

Clean Air Act Section 602 Class I Substances : Not listed

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

State regulations

Massachusetts : The following components are listed: HELIUM

New York : None of the components are listed.

New Jersey : The following components are listed: HELIUM

Pennsylvania : The following components are listed: HELIUM

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
2-Ethoxy-2-methylpropane	No.	Yes.	No.	No.
2-Methoxy-2-methylbutane	No.	Yes.	No.	No.
Methanol	No.	Yes.	No.	No.
Ethanol	Yes.	No.	No.	No.

16. Other information

Label requirements : HIGH PRESSURE GAS. GAS REDUCES OXYGEN AVAILABLE FOR BREATHING. AT VERY HIGH CONCENTRATIONS, CAN DISPLACE THE NORMAL AIR AND CAUSE SUFFOCATION FROM LACK OF OXYGEN. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Date of issue : 06/13/2012

Date of previous issue : 04/07/2011.

Version : 2

☑ Indicates information that has changed from previously issued version.

Notice to reader

16. Other information

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.