Methane (0.0001 - <4.4%) in balance Air

Safety Data Sheet 50122

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SECTION 1: Identification

1.1. Identification

Product form : Mixtures

Product name : Methane (0.0001 - <4.4%) in balance Air

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Test gas/Calibration gas.

1.3. Supplier

Calgaz, division of Airgas USA LLC
821 Chesapeake Drive
Cambridge, 21613 - USA
T 1-410-228-6400 - F 1-410-228-4251
info@Calgaz.com - www.Calgaz.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300
Internationally: 1-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Gases under pressure Compressed gas	H280	Contains gas under pressure; may explode if heated

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated
CGA-HG24 - Supports combustion

Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, face protection, protective gloves, protective clothing.
P403 - Store in a well-ventilated place.
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C/125 °F
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG06 - Close valve after each use and when empty
CGA-PG10 - Use only with equipment rated for cylinder pressure
CGA-PG14 - Approach suspected leak area with caution
CGA-PG21 - Open valve slowly

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Nitrogen	(CAS-No.) 7727-37-9	74.7 - 79.0999	Press. Gas (Comp.), H280
Oxygen	(CAS-No.) 7782-44-7	20.9	Ox. Gas 1, H270 Press. Gas (Comp.), H280
Methane	(CAS-No.) 74-82-8	0.0001 - 4.4	Flam. Gas 1, H220 Press. Gas (Comp.), H280

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Adverse effects not expected from this product.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Adverse effects not expected from this product.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Adverse effects not expected from this product.

Symptoms/effects after skin contact : Adverse effects not expected from this product.

Symptoms/effects after eye contact : Adverse effects not expected from this product.

Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/effects upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

Most important symptoms and effects, both acute and delayed : No effect on living tissue. Refer to section 11.

4.3. Immediate medical attention and special treatment, if necessary

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Specific hazards arising from the chemical

Fire hazard : The product is not flammable.

Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity : None known.

Hazardous combustion products : Incomplete combustion may form carbon monoxide.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

Protection during firefighting : Standard protective clothing and equipment (e.g, Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

Special protective equipment for fire fighters : Standard protective clothing and equipment (e.g, Self Contained Breathing Apparatus) for fire fighters. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

Specific methods : Exposure to fire may cause containers to rupture/explode. Continue water spray from protected position until container stays cool. Move containers away from the fire area if this can be done without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation. Cool down the containers exposed to heat with a water spray. Continue water spray from protected position until container stays cool.

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment consistent with the site emergency plan.

Emergency procedures	:	Evacuate personnel to a safe area. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

6.1.2. For emergency responders

Protective equipment	:	Standard protective clothing and equipment (e.g, Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures	:	Evacuate and limit access. Ventilate area.

6.2. Environmental precautions

Try to stop release if without risk.

6.3. Methods and material for containment and cleaning up

For containment	:	Try to stop release if without risk.
Methods for cleaning up	:	Dispose of contents/container in accordance with local/regional/national/international regulations.
Methods and material for containment and cleaning up	:	None.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty.
Precautions for safe handling	:	Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area.
Safe handling of the gas receptacle	:	Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
Safe use of the product	:	Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularily) checked for leaks before use. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Hygiene measures	:	Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Comply with applicable regulations.
Storage conditions	:	Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep container closed when not in use. Protect cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.
Incompatible products	:	None known.
Incompatible materials	:	Flammable materials.
Conditions for safe storage, including any incompatibilities	:	Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.
Storage area	:	Store away from heat. Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methane (74-82-8)
Not applicable

Oxygen (7782-44-7)
Not applicable

Nitrogen (7727-37-9)
Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Consider the use of a work permit system e.g. for maintenance activities.
Environmental exposure controls	:	Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear working gloves when handling gas containers. 29 CFR 1910.138: Hand protection

Eye protection:

Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection

Skin and body protection:

Wear suitable protective clothing, e.g. lab coats, coveralls or flame resistant clothing.

Respiratory protection:

None necessary during normal and routine operations. See Sections 5 & 6.

Thermal hazard protection:

None necessary during normal and routine operations.

Other information:

Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Clear, colorless gas.
Color	:	Colorless
Odor	:	Odorless
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Relative gas density	:	Similar to air
Solubility	:	Water: No data available
Log Pow	:	Not applicable for gas-mixtures. Not applicable for gas-mixtures.
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	Not applicable (non-flammable gas).

Oxidizing properties : Supports combustion.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form explosive mixtures with flammable materials.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Flammable materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Methane (74-82-8)	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	820000.000 ppmV/4h

Oxygen (7782-44-7)	
LC50 inhalation rat (ppm)	800000 ppm/4h
ATE US (gases)	800000.000 ppmV/4h

Nitrogen (7727-37-9)	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	820000.000 ppmV/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects after inhalation : Adverse effects not expected from this product.

Symptoms/effects after skin contact : Adverse effects not expected from this product.

Symptoms/effects after eye contact : Adverse effects not expected from this product.

Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/effects upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological damage caused by this product.

Methane (74-82-8)	
LC50-96 h - fish [mg/l]	147.5 mg/l
EC50 48h - Daphnia magna [mg/l]	69.4 mg/l
EC50 72h Algae [mg/l]	19.4 mg/l

12.2. Persistence and degradability

Methane (0.0001 - <4.4%) in balance Air	
Persistence and degradability	No data available.

Methane (74-82-8)	
Persistence and degradability	The substance is readily biodegradable. Unlikely to persist.

Oxygen (7782-44-7)	
Persistence and degradability	No ecological damage caused by this product.

Nitrogen (7727-37-9)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

Methane (0.0001 - <4.4%) in balance Air	
Log Pow	Not applicable for gas-mixtures.
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	No data available.

Methane (74-82-8)	
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

Oxygen (7782-44-7)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

Nitrogen (7727-37-9)	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

12.4. Mobility in soil

Methane (0.0001 - <4.4%) in balance Air	
Mobility in soil	No data available

Methane (74-82-8)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

Oxygen (7782-44-7)	
Ecology - soil	No ecological damage caused by this product.

Nitrogen (7727-37-9)	
Ecology - soil	No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.

Product/Packaging disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	:	UN1956 Compressed gas, n.o.s. (Oxygen, Nitrogen), 2.2
UN-No.(DOT)	:	UN1956
Proper Shipping Name (DOT)	:	Compressed gas, n.o.s.
Hazard labels (DOT)	:	2.2 - Non-flammable gas



DOT Packaging Non Bulk (49 CFR 173.xxx)	:	302;305
DOT Packaging Bulk (49 CFR 173.xxx)	:	314;315
DOT Symbols	:	G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	:	306;307
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	150 kg
DOT Vessel Stowage Location	:	A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.
Special transport precautions	:	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transportation of Dangerous Goods

Transport document description	:	UN1956 Compressed gas, n.o.s. (Oxygen, Nitrogen), 2.2
UN-No. (TDG)	:	UN1956
Proper Shipping Name	:	Compressed gas, n.o.s.
TDG Primary Hazard Classes	:	2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.

Transport by sea

Transport document description (IMDG)	:	UN 1956 Compressed gas, n.o.s., 2
UN-No. (IMDG)	:	1956
Proper Shipping Name (IMDG)	:	Compressed gas, n.o.s.
Class (IMDG)	:	2 - Gases
Limited quantities (IMDG)	:	120 ml

Air transport

Transport document description (IATA)	:	UN 1956 Compressed gas, n.o.s., 2.2
UN-No. (IATA)	:	1956
Proper Shipping Name (IATA)	:	Compressed gas, n.o.s.
Class (IATA)	:	2

SECTION 15: Regulatory information

15.1. US Federal regulations

Methane (74-82-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Oxygen (7782-44-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Nitrogen (7727-37-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Methane (74-82-8)
Listed on the Canadian DSL (Domestic Substances List)

Oxygen (7782-44-7)
Listed on the Canadian DSL (Domestic Substances List)

Nitrogen (7727-37-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Methane (74-82-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Oxygen (7782-44-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Nitrogen (7727-37-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Methane (74-82-8)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)

Oxygen (7782-44-7)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

Nitrogen (7727-37-9)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Methane (74-82-8)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

Oxygen (7782-44-7)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Nitrogen (7727-37-9)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 12/12/2017

Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases:

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

SDS US (GHS HazCom 2012)

This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of Calgaz's knowledge, the information contained herein is reliable and accurate as of this date; however, accruacy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.