



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Four-Gas Mixture (Methane) Replacement Gas: 0.0015-23.5% O2; 0.0005-2.5% CH4; 0.0005-1.0% CO; 0.001-0.025% HS; Balance N2
MANUFACTURER: 3M
DIVISION: Occupational Health & Environ. Safety
ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 10/01/10
Supersedes Date: 05/05/10

Document Group: 22-5472-0

Product Use:

Intended Use: Calibration Gas

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
NITROGEN	7727-37-9	> 79
OXYGEN	7782-44-7	Approximately 18
METHANE	74-82-8	< 2.5
CARBON MONOXIDE	630-08-0	< 0.01

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Compressed Gas Cylinder under pressure (typically 500 psig)

Odor, Color, Grade: colorless, sulfur odor

General Physical Form: Gas

Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

No health effects are expected.

Skin Contact:

No health effects are expected.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Chemical Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, light-headedness, difficulty breathing, headache, nausea, impaired judgment, fainting, seizures, coma, and may be fatal.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

No health effects are expected.

Target Organ Effects:

Prolonged or repeated exposure may cause:

Methemoglobinemia: Signs/symptoms may include headache, dizziness, nausea, difficulty breathing, and generalized weakness.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: No need for first aid is anticipated.

Skin Contact: No need for first aid is anticipated.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature

Not Applicable

Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>
OSHA Flammability Classification:	Not Determined

5.2 EXTINGUISHING MEDIA

Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. No container should be exposed to a temperature higher than 82 degrees C (approximately 125 degrees F).

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. Close cylinder. If the cylinder can't be closed, place in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors.

Environmental procedures

Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Clean up residue.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

For industrial or professional use only. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Store away from heat. Store out of direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation. Not applicable.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields

8.2.2 Skin Protection

Not applicable. Gloves are not required.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

Not applicable.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Alkanes, C1-4	ACGIH	TWA	1000 ppm	
CARBON MONOXIDE	ACGIH	TWA	25 ppm	
CARBON MONOXIDE	OSHA	TWA	55 mg/m3	
Nitrogen	ACGIH	Limit value not established	****Missing Data**** No UOM specified or needed.	simple asphyxiant
NITROGEN	ACGIH	Limit value not established	****Missing Data**** No UOM specified or needed.	simple asphyxiant

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Compressed Gas Cylinder under pressure (typically 500 psig)
Odor, Color, Grade:	colorless, sulfur odor
General Physical Form:	Gas
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>

Flammable Limits - UEL	Not Applicable
Boiling point	-317.8 °F
Density	1.29 g/l
Vapor Density	1.00 [Ref Std: AIR=1]
Vapor Pressure	Not Applicable
Specific Gravity	No Data Available
pH	Not Applicable
Melting point	Not Applicable
Solubility In Water	Not Applicable
Evaporation rate	Not Applicable
Volatile Organic Compounds	Not Applicable
Kow - Oct/Water partition coef	No Data Available
Percent volatile	100 %
VOC Less H2O & Exempt Solvents	Not Applicable
Viscosity	Not Applicable
Conditions to avoid	Heat

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

Heat

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
None known.	Not Specified

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a facility permitted to accept chemical waste. Vent cylinder or pressurized container in an operating exhaust hood or remote area.

Dispose of empty cylinders in a landfill.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

70-0714-0351-6, 70-0714-0352-4, 70-0714-0353-2, 70-0714-0375-5, 70-0715-1726-5, 70-0715-1727-3, 70-0715-8270-7

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CALIFORNIA PROPOSITION 65

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
CARBON MONOXIDE	630-08-0	*Developmental Toxin

* WARNING: contains a chemical or chemicals which can cause birth defects or other reproductive harm.

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 1 Flammability: 0 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:

- Section 14: Transportation legal text was modified.
- Section 15: Inventories information was modified.
- Section 8: Exposure guidelines ingredient information was modified.
- Section 6: Environmental procedures heading was added.
- Section 6: Personal precautions heading was added.
- Section 6: Clean-up methods heading was added.
- Section 6: Release measures heading was deleted.

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MATERIAL SAFETY DATA SHEET Four-Gas Mixture (Methane) Replacement Gas: 0.0015-23.5% O₂; 0.0005-2.5% CH₄; 0.0005-1.0% CO; 0.001-0.025% HS; Balance N₂ 10/01/10

In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com



Transport Information Document

Date: December 13, 2010

3M ID Number: 70-0714-0375-5

Product Description: 3M(TM) Calibration Gas Kit (Methane) 34L 10% LEL ME/35 PPM CO/10 PPM HS/18% OX 933-000-023 1/Case

Transport Protective Service: PROTECTIVE SERVICE NOT REQUIRED

NMFC Item: 127220

NMFC Sub: 00

NMFC Class: 077.5

Flash Point (Closed-cup): No Flash Point

UNITED STATES DEPARTMENT OF TRANSPORTATION - GROUND (U.S. DOT, 49 CFR)

UN1956, COMPRESSED GAS, N.O.S., (NITROGEN AND OXYGEN), 2.2

UNITED STATES DEPARTMENT OF TRANSPORTATION - VESSEL (U.S. DOT, 49 CFR)

UN1956, COMPRESSED GAS, N.O.S., (NITROGEN AND OXYGEN), 2.2

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

UN1956, COMPRESSED GAS, N.O.S., (NITROGEN AND OXYGEN), 2.2

INTERNATIONAL MARITIME ORGANIZATION (IMO)

FORBIDDEN 3M DIVISION POLICY

The classification is authorized by the Competent Authority of the United States of America and may not meet the requirements of other competent authorities.

These transportation classifications are provided as a customer service. AS THE SHIPPER YOU REMAIN RESPONSIBLE FOR COMPLYING WITH ALL THE APPLICABLE LAWS AND REGULATIONS, INCLUDING PROPER TRANSPORTATION CLASSIFICATION AND PACKAGING. 3M's transportation classifications are based on product formulations, packaging, 3M policies and 3M's understanding of applicable current regulations and is valid for the original 3M package only. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and NOT THE PACKAGING, LABELING, OR MARKING REQUIREMENTS. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

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or call 1-800-364-3577 or 651-737-6501 for assistance.