

### Safety Data Sheet 50019MSA

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/24/2014 Version: 1.0

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

### 1.1. Product identifier

Product form : Mixture

Product name : Oxygen (0.01 - 19%), Methane (0.0005-2.5%), Hydrogen Sulfide (0.0005-0.025%) in Nitrogen

Balance

MSA P/N : 711056, 804769, 10028058, 10048790, 1048889, 10048888, 10089547

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

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

### 1.3. Details of the supplier of the safety data sheet

Manufacturer:

Calgaz, divison of Air Liquide 821 Chesapeake Drive Cambridge, MD 21613

U.S. Supplier Mine Safety Appliances Company 100 Cranberry Woods Drive Cranberry Township Pennsylvania U.S.A. 16066

1-800-MSA-2222 www.msanet.com/prism

### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

Internationally: 1-703-527-3887

# **SECTION 2: Hazards identification**

### 2.1. Classification of the substance or mixture

### Classification (GHS-US)

Compressed gas H280

Full text of H-phrases: see section 16

### 2.2. Label elements

### **GHS-US** labeling

Hazard pictograms (GHS-US)



GHS04

Signal word (GHS-US)

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

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

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P313 - Get medical advice/attention

CGA-PG05 - Use a back flow preventive device in the piping

CGA-PG21 - Open valve slowly

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-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

P403 - Store in a well-ventilated place

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### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS-US)

Not applicable

### **SECTION 3: Composition/information on ingredients**

#### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Nitrogen	(CAS No) 7727-37-9	78.475 - 99.989	Compressed gas, H280
Oxygen	(CAS No) 7782-44-7	0.01 - 19	Ox. Gas 1, H270
Methane	(CAS No) 74-82-8	0.0005 - 2.5	Flam. Gas 1, H220
Hydrogen sulfide	(CAS No) 7783-06-4	0.0005 - 0.025	Not classified

Full text of H-phrases: see section 16

# **SECTION 4: First aid measures**

### 4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel

unwell, seek medical advice.

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, both acute and delayed

Symptoms/injuries : Symptoms similar to those listed under inhalation.

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation.

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

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

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

Symptoms/injuries upon intravenous

administration

: Not known.

Chronic symptoms : Adverse effects not expected from this product.

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

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen. Obtain medical attention if breathing difficulty persists.

### **SECTION 5: Firefighting measures**

# 5.1. Extinguishing media

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

Unsuitable extinguishing media : Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

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.

### 5.3. Advice for firefighters

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

fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

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### **SECTION 6: Accidental release measures**

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation.

### 6.1.1. For non-emergency personnel

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

Emergency procedures : Escape the danger area by the closest safe route. 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 safe to do so. Stop leak if safe to do so.

### 6.3. Methods and material for containment and cleaning up

For containment : Try to stop release if safe to do so. Stop leak if safe to do so.

Methods for cleaning up : Dispose of this material and its container in accordance with local regulations.

#### 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 equipment rated for cylinder

pressure

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.

Hygiene measures : Do not eat, drink or smoke when using this product.

Oxygen (0.01 - 19%), Methane (0.0005-2.5%), Hydrogen Sulfide (0.0005-0.025%) in Nitrogen Balance

### 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). Store locked up. Keep container

closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.

Incompatible products : None known.
Incompatible materials : None known.

### 7.3. Specific end use(s)

Test gas/Calibration gas.

# SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Chygon (0.0 : 10 /0), mountain	to (ordered in 70), my an eigent cum are (ordered ordinary) militaries	
ACGIH	Not applicable	
OSHA	Not applicable	
Nitrogen (7727-37-9)		
ACGIH	Not applicable	
OSHA	Not applicable	

Methane (74-82-8)		
ACGIH	ACGIH TWA (ppm)	1000 ppm
OSHA	Not applicable	

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Hydrogen sulfide (7783-06-4)		
ACGIH	ACGIH TWA (ppm)	1 ppm
ACGIH	ACGIH STEL (ppm)	5 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm

Oxygen (7782-44-7)	
ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

Appropriate engineering controls : Ensure exposure is below occupational exposure limits. Provide adequate general and local

exhaust ventilation. Systems under pressure should be regularly checked for leakages.

Consider work permit system e.g. for maintenance activities.

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

Environmental exposure controls : Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for

specific methods for waste gas treatment.

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.

Molecular mass : Not applicable for gas-mixtures.

Color : Colorless

Odor : There may be no odour warning properties, odour is subjective and inadequate to warn of

overexposure.

Mixture contains one or more component(s) which have the following odour(s):

Rotten eggs.

Odor threshold : No data available

pH : Not applicable for gas-mixtures.

Relative evaporation rate (butyl acetate=1) : No data available

Relative evaporation rate (ether=1) : Not applicable for gas-mixtures.

Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available

Flammability (solid, gas) : Not flammble - not combustible

Vapor pressure : Not applicable.

Relative vapor density at 20 °C : No data available

Relative density : No data available

Relative gas density : Heavier than air.

Solubility : Water: Solubility in water of component(s) of the mixture :

•: 20 mg/l •: 26 mg/l •: 3980 mg/l •: 39 mg/l

Log Pow : Not applicable for gas-mixtures.

Log Kow : Not applicable for gas-mixtures.

Viscosity, kinematic : Not applicable.
Viscosity, dynamic : Not applicable.

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Explosive properties : Not applicable - not flammable.

Oxidizing properties : None.

Explosive limits : Not applicable - not flammable

9.2. Other information

Gas group : Compressed gas

Additional information : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below

ground level.

### **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

None known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None known.

#### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

None known.

### 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

820000 ppm/4h
820000 ppm/4h
0.99 mg/l (Exposure time: 1 h)
356 ppm/4h
800000 ppm/4h
: Not classified
pH: Not applicable for gas-mixtures.
: Not classified
pH: Not applicable for gas-mixtures.
: Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated : Not classified

exposure)

Germ cell mutagenicity

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation.

: Not classified

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

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

Symptoms/injuries 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.

Hydrogen sulfide (7783-06-4)	
LC50 fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
EC50 Daphnia 1	0.022 mg/l (Exposure time: 96 h - Species: Gammarus pseudolimnaeus)
LC50 fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

# 12.2. Persistence and degradability

Oxygen (0.01 - 19%), Methane (0.0005-2.5%), Hydrogen Sulfide (0.0005-0.025%) in Nitrogen Balance		
Persistence and degradability	No data available.	
Nitrogen (7727-37-9)		
Persistence and degradability	No ecological damage caused by this product.	
Methane (74-82-8)		
Persistence and degradability	The substance is biodegradable. Unlikely to persist. No data available.	
Hydrogen sulfide (7783-06-4)		
Persistence and degradability	Not applicable for inorganic gases.	
Oxygen (7782-44-7)		
Persistence and degradability	No ecological damage caused by this product.	

### 12.3. Bioaccumulative potential

Oxygen (0.01 - 19%), Methane (0.0005-2.5%), Hydrogen Sulfide (0.0005-0.025%) in Nitrogen Balance		
Log Pow	Not applicable for gas-mixtures.	
Log Kow	Not applicable for gas-mixtures.	
Bioaccumulative potential	No data available.	
Nitrogen (7727-37-9)		
Log Pow	Not applicable for inorganic gases.	
Bioaccumulative potential	No ecological damage caused by this product.	
Methane (74-82-8)		
Log Pow	1.09	
Log Kow	Not applicable for gas-mixtures.	
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.	
Hydrogen sulfide (7783-06-4)		
BCF fish 1	(no bioaccumulation expected)	
Log Pow	Not applicable for inorganic gases.	
Bioaccumulative potential	No data available.	
Oxygen (7782-44-7)		
Log Pow	Not applicable for inorganic gases.	
Bioaccumulative potential	No ecological damage caused by this product.	

# 12.4. Mobility in soil

Oxygen (0.01 - 19%), Methane (0.0005-2.5%), Hydrogen Sulfide (0.0005-0.025%) in Nitrogen Balance	
Mobility in soil	No data available.
Nitrogen (7727-37-9)	
Ecology - soil	No ecological damage caused by this product.

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Methane (74-82-8)		
Mobility in soil	No data available.	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.	
Hydrogen sulfide (7783-06-4)		
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.	

#### 12.5. Other adverse effects

Effect on ozone layer : None.

Effect on the global warming : Contains greenhouse gas(es) not covered by 842/2006/EC.

# **SECTION 13: Disposal considerations**

### 13.1. Waste treatment 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.

Waste disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more

: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115

guidance on suitable disposal methods.

# **SECTION 14: Transport information**

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.

Department of Transportation (DOT) Hazard

Classes

Hazard labels (DOT) : 2.2 - Non-flammable gas



DOT Symbols : G - Identifies PSN requiring a technical name

DOT Packaging Exceptions (49 CFR 173.xxx) : 306;307

DOT Packaging Non Bulk (49 CFR 173.xxx) : 302;305

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

DOT Quantity Limitations Passenger aircraft/rail : 75 kg

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 150 kg

CFR 175.75)

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel.

**Additional information** 

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.

**ADR** 

Transport document description : UN 1956 COMPRESSED GAS, N.O.S., 2.2

Class (ADR) : 2 - Gases

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Hazard labels (ADR) : 2.2 - Non-flammable compressed gas



### Transport by sea

UN-No. (IMDG)

Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.

Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

Air transport

UN-No.(IATA) : 1956

Proper Shipping Name (IATA) : COMPRESSED GAS, N.O.S.

Class (IATA)

### **SECTION 15: Regulatory information**

### 15.1. US Federal regulations

ı	Mill Ogen (1121-31-3)	
	Listed on the United States TSCA (Toxic Substances Control Act) inventory	Ī

### Methane (74-82-8)

Nitrogen (7727-37-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Hydrogen sulfide (7783-06-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on the United States SARA Section 302 Listed on United States SARA Section 313

SARA Section 302 Threshold Planning

500 Quantity (TPQ)

SARA Section 313 - Emission Reporting 1.0 %

### Oxygen (7782-44-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

### **CANADA**

Nitrogen (7727-37-9)		
Listed on the Canadian DSL (Domestic Sustances List)		
WHMIS Classification	Class A - Compressed Gas	
Methane (74-82-8)		
Listed on the Canadian DSL (Domestic Sustances List)		
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas	
Hydrogen sulfide (7783-06-4)		
Listed on the Canadian DSL (Domestic Sustances List)		
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects	
Oxygen (7782-44-7)		
Listed on the Canadian DSL (Domestic Sustances List)		
WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material	

### **EU-Regulations**

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### Nitrogen (7727-37-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### Methane (74-82-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### Hydrogen sulfide (7783-06-4)

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)

### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

### 15.2.2. National regulations

### 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)

### 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 Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### Hydrogen sulfide (7783-06-4)

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 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 the Canadian IDL (Ingredient Disclosure List)

# 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)

### 15.3. US State regulations

# 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

### 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

# Hydrogen sulfide (7783-06-4)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) Environmental Hazard List
- U.S. Pennsylvania RTK (Right to Know) List

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### 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

# **SECTION 16: Other information**

Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation

promulgated March 26, 2012.

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:

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Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
Ox. Gas 1	Oxidizing gases Category 1
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.

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