



User Safety Notice MSA Four Gas Calibration Cylinders (58L)

April 30, 2021

MSA Corporate Center
1000 Cranberry Woods Drive
Cranberry Township, PA 16066
800.MSA.2222
www.MSAafety.com

Dear MSA Calibration Cylinder Customer,

MSA is issuing this User Safety Notice to inform you of action required for a single production lot of Four Gas Calibration Cylinders (58L). The manufacturer of the cylinders has informed MSA that the torque used to secure the valve to MSA Four Gas Calibration Cylinders in lot 239511 may have been below specification for some cylinders in the lot.

When disconnecting the calibration cylinder from an accessory, such as the Galaxy® GX2 Automated Test System (GX2), there is potential that the cylinder will unthread from the valve. If this happens, the pressure in the cylinder can cause the cylinder to become a projectile.

MSA has not received any reports of injuries associated with this condition. However, we are requesting that you perform the actions outlined in this notice.

The composition and quality of the calibration gas in the cylinders is unaffected by this condition.

MSA is advising all customers remove from service MSA Four Gas Calibration Cylinders (58L) marked with lot 239511 and cylinder part number 10045035. Follow the instructions in this notice before attempting to disconnect a cylinder from an accessory. Dispose of the cylinders in accordance with local regulations and contact MSA for a replacement.

Potentially affected cylinders were sold as part number 10045035. In Brazil, potentially affected 10045035 cylinders were also sold as part of calibration kit part numbers 10195003, 10197496, 10214653 and 219445.

Identifying Potentially Affected Product

Review the cylinder labels for the part number and lot number (See Figure 1). Alternately, if the cylinder is installed in a GX2 with RFID capability, you can use the test system interface to view the part number and lot number (See Figure 2). Do not loosen a cylinder installed in a GX2 in an attempt to read the label.

Your cylinder is impacted if the lot number is 239511 AND cylinder part number is 10045035.

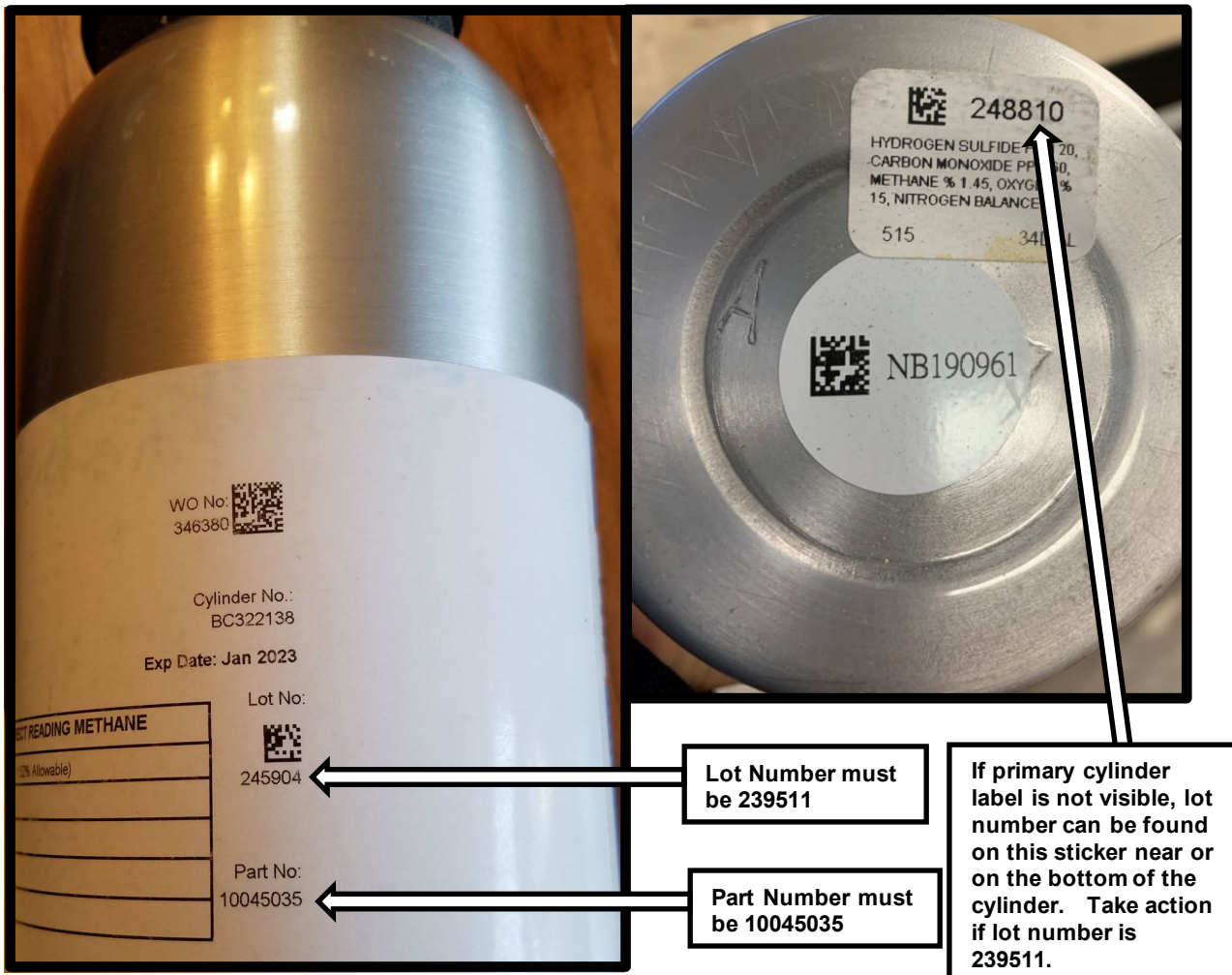


Figure 1 – Part Number and Lot Number Information on Cylinder Label

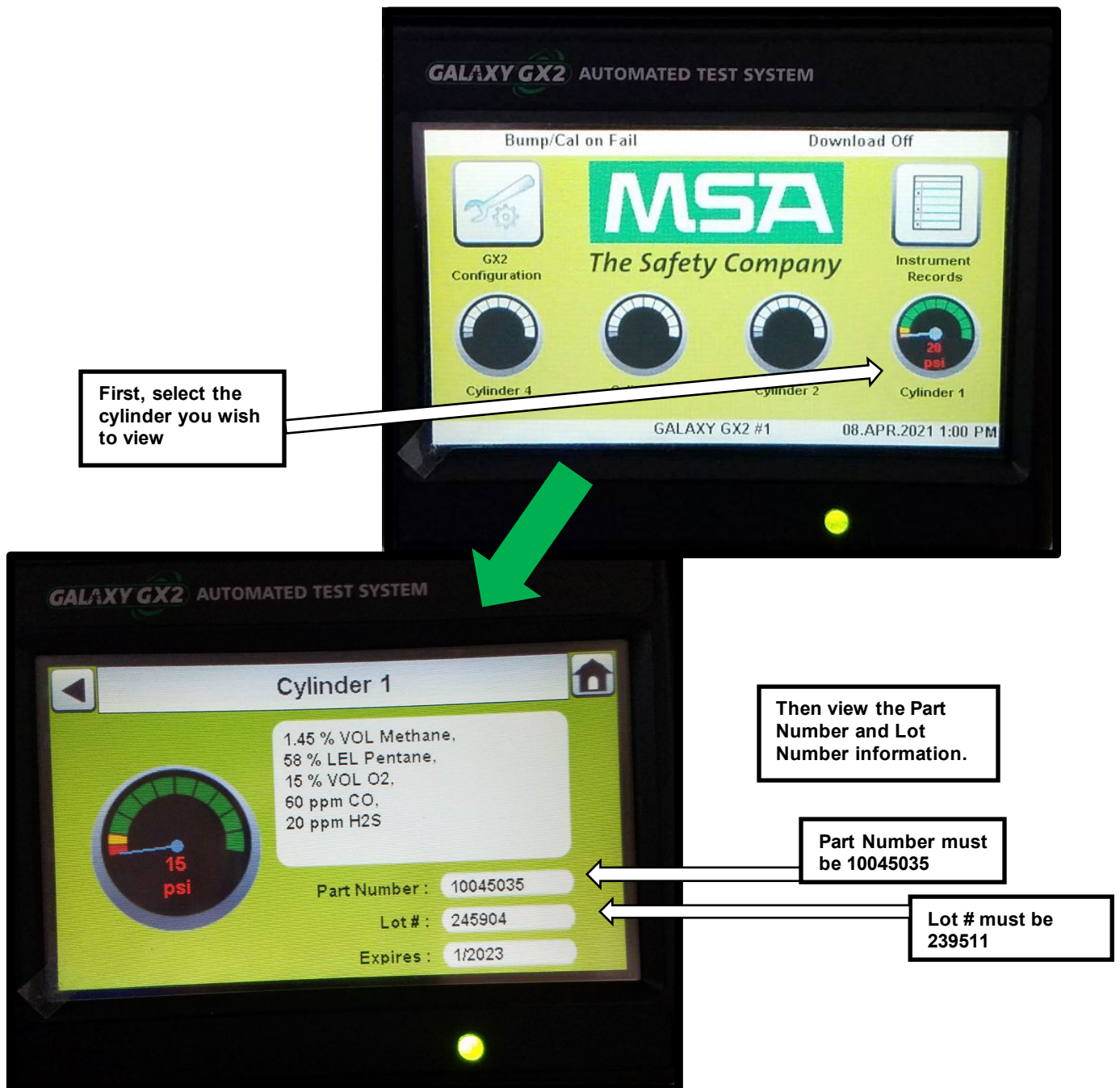


Figure 2 – Viewing Cylinder Part Number and Lot Number on Galaxy GX2 Automated Test System

Addressing Potentially Affected MSA Four Gas Calibration Cylinders (58L)

We recognize that this is an inconvenience and in an effort to minimize any disruption, we pledge to take any replacement actions as expeditiously as possible.

If you are in possession of MSA Four Gas Calibration Cylinders (58L) that meet the criteria for affected product above, follow the instructions below to remove the cylinder from service and dispose of them per local regulations. MSA will replace your cylinders free of charge.

To receive replacement cylinders, please complete the enclosed *MSA Four Gas Calibration Cylinder (58L) Replacement Order Form* and e-mail it to MSA Customer Service at the appropriate e-mail address below. Please note that you must provide a photo of the label showing the cylinder number, part number and lot number for each replacement cylinder that you request.

Removing Cylinders from Service

SHOULD YOU HAVE ANY QUESTIONS OR REQUIRE SUPPORT FOR THESE OPTIONS PLEASE CONTACT MSA CUSTOMER SERVICE AT THE CONTACT INFORMATION BELOW.

1. If the cylinder is NOT installed in a GX2:
 - a. If the cylinder is attached to an MSA fixed flow regulator, use the regulator to vent the cylinder to zero pressure. Vent the cylinder contents in a well-ventilated area outdoors as per the Safety Data Sheet – attached. Do not remove the regulator until the cylinder is vented to zero pressure. Once the cylinder is vented to zero pressure, remove the regulator from the cylinder and dispose of the cylinder in accordance with local regulations.
 - b. If the cylinder is not attached to an MSA regulator, attach an MSA fixed flow regulator and follow the instructions in 1a above. If you do not have an MSA fixed flow regulator, contact MSA customer service to request one. While awaiting delivery of the MSA fixed flow regulator, put controls in place to ensure that the cylinder is not used.
 - c. If the cylinder is attached to an MSA demand flow regulator for pumped instruments such as the Altair 5X, vent the cylinder using an MSA Altair Pump Probe (Part Number 10152669). Vent the cylinder contents in a well-ventilated area outdoors as per the Safety Data Sheet – attached. If you do not have an MSA Altair Pump Probe, contact MSA Customer Service. While awaiting delivery of the MSA Altair Pump Probe, put controls in place to ensure that the cylinder is not used.
 - i. Prepare the pump probe per the steps in Figure 4.
 - ii. Connect the pump probe to the demand flow regulator with 1/8 inch inner diameter tubing.
 - iii. Turn on the pump probe (green light indicator will be on).
 - iv. Once the cylinder is empty, the pump probe will beep and the light indicator will turn solid red. Remove the regulator from the cylinder and dispose of the cylinder in accordance with local regulations.

Fixed Flow Regulator



Demand Flow Regulator

2. If the cylinder is installed in a GX2, follow the instructions below.
 - a. Vent the cylinder while it is in the GX2 using an MSA Altair Pump Probe (Part Number 10152669). Vent the cylinder contents in a well-ventilated area outdoors as per the Safety Data Sheet – attached. If you do not have an MSA Altair Pump Probe, contact MSA Customer Service. While awaiting delivery of the MSA Altair Pump Probe, put controls in place to ensure that the cylinder is not removed from the GX2.
 - i. If the GX2 is mounted to a wall, follow the steps in Figure 3 to remove it from the wall. Multiple people are required during this effort to support the GX2 while it is removed from the wall.
 - ii. Remove the cylinder holder with the affected cylinder from the cylinder bank per the steps in Figure 5.
 - iii. Prepare the pump probe per the steps in Figure 4.
 - iv. Connect the pump probe to the cylinder holder gas out port (see Figure 6).
 - v. Turn on the pump probe (green light indicator will be on).
 - vi. Once the cylinder is empty, the pump probe will beep and the light indicator will turn solid red. Remove the cylinder from the cylinder holder and dispose of the cylinder in accordance with local regulations.

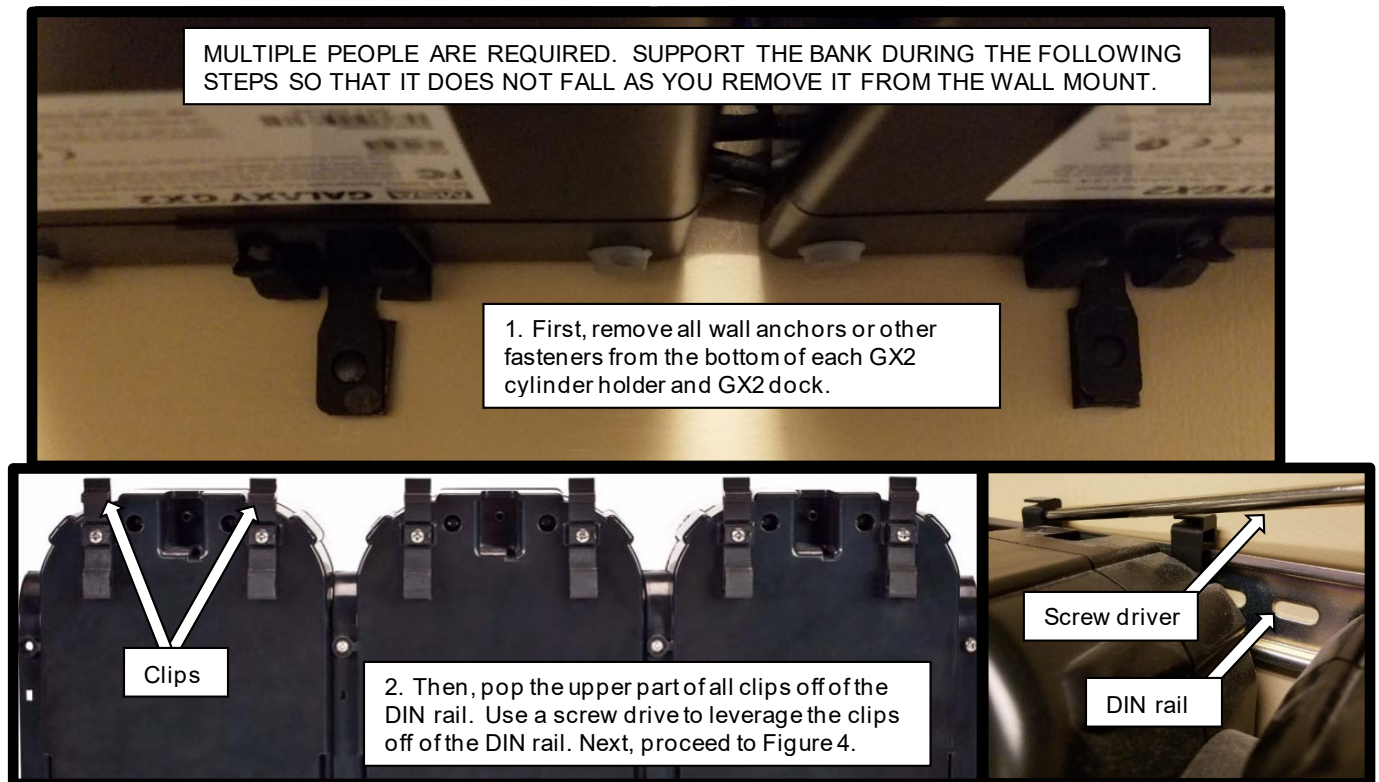


Figure 3 – Removing a GX2 from a Wall Mount

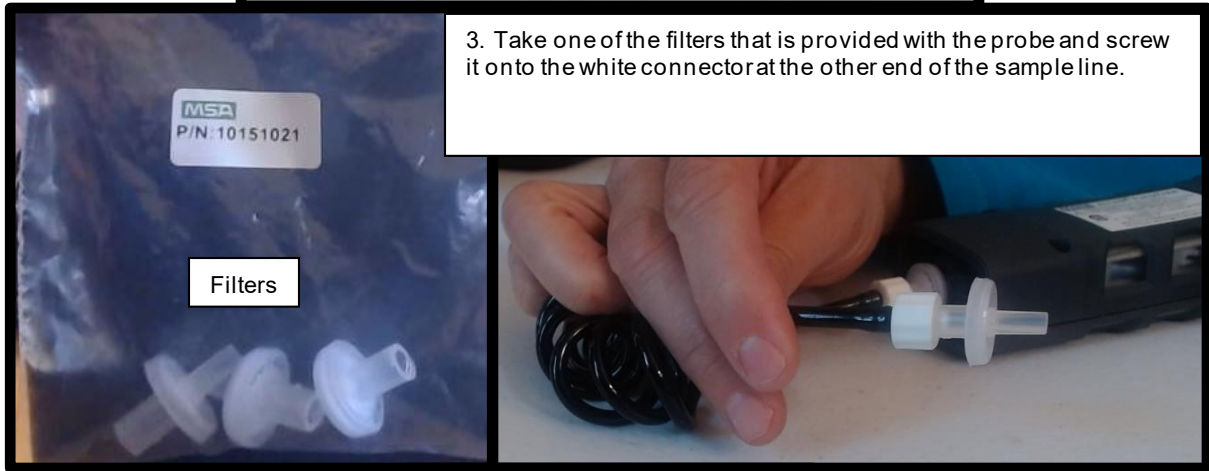
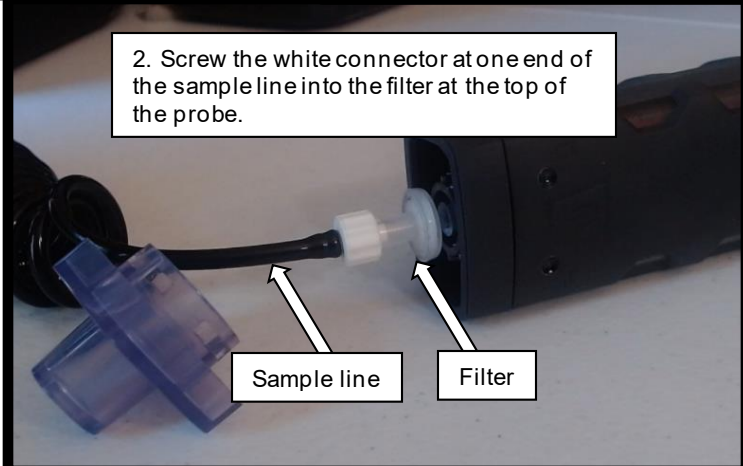
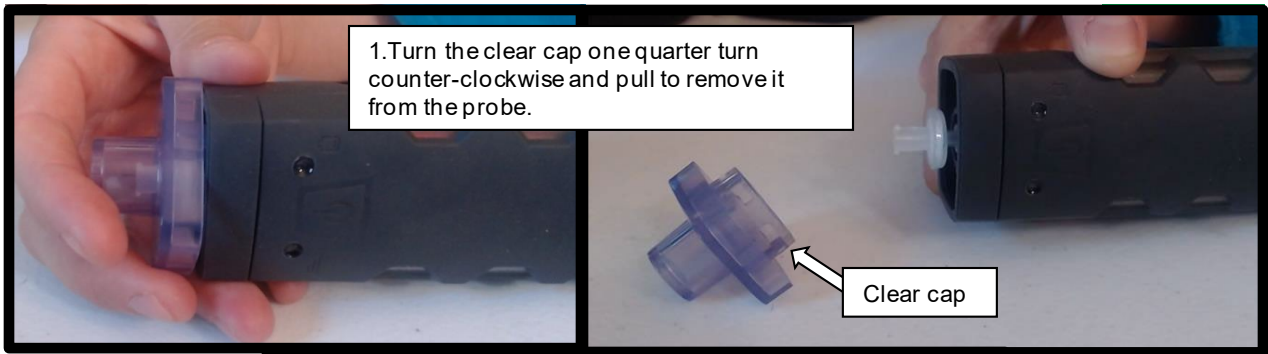


Figure 4 – Preparing the Pump Probe



Figure 5 – Removing a Cylinder Holder from a GX2 Bank

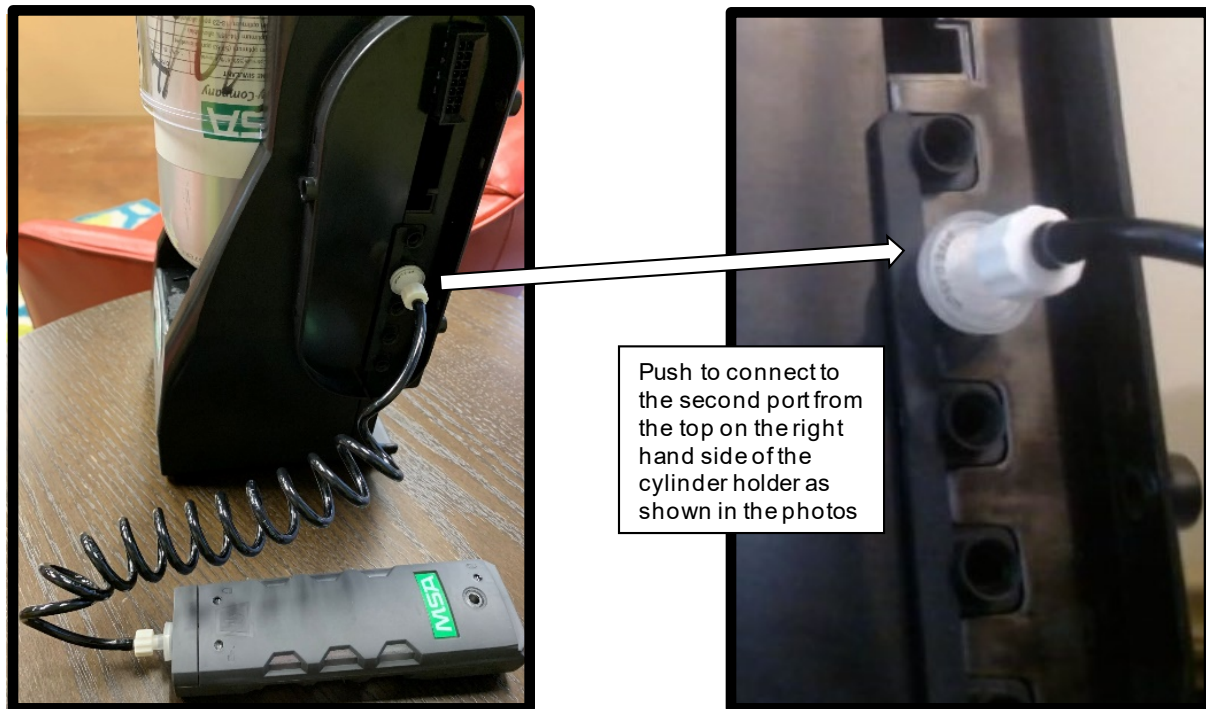


Figure 6 – Connecting the pump probe to the cylinder holder



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MSA Customer Service Contact Information:

If you have any questions regarding this User Safety Notice, please contact MSA Customer Service as follows:

- U.S., Canada, or U.S. Territories – +1-866-672-0005, ProductSafetyNotices@MSAsafety.com
- Australia, New Zealand – +61 (02) 9688 0333 / 1300 728 672, aus.customerservice@msasafety.com
- Asia – +603-9767 8800, msa.malaysia@msasafety.com
- Brazil – +55 11 4070-5999 option 2, vendas@msasafety.com
- Chile – +56 (2) 29475799, atencion.clientes@msasafety.com
- Colombia – +57 1 5142950 / 01.8000.93.1313, atencion.clientes@msasafety.com
- Mexico – +52 442.227.3970, atencion.clientes@msasafety.com
- Peru – (+51) 1 6180930, atencion.clientes@msasafety.com
- Argentina – +54 (11) 4834-4800, atencion.clientes@msasafety.com
- Middle East, Africa – cs.mideast@msasafety.com

We apologize for any inconveniences that this may cause; however, your safety and continued satisfaction with our products is important to us.

Issued by: Nathan Andrulonis
Director, Product Safety

PS21007-02



MSA Four Gas Calibration Cylinder (58L) Replacement Order Form

Please complete this form and email it to MSA Customer Service at the following address. Also include in your e-mail a photo of the label showing the cylinder number, part number and lot number for each replacement cylinder that you request.

MSA Corporate Center
1000 Cranberry Woods Drive
Cranberry Township, PA 16066
800.MSA.2222
www.MSAsafety.com

- U.S., Canada, or U.S. Territories – ProductSafetyNotices@MSAsafety.com
- Australia, New Zealand – aus.customerservice@msasafety.com
- Asia – msa.malaysia@msasafety.com
- Brazil – vendas@msasafety.com
- Latin America – atencion.clientes@msasafety.com
- Middle East, Africa – cs.mideast@msasafety.com

Multiple orders can be placed by submitting additional copies of this form.

Name: _____

Shipping Address: _____

Phone: _____ E-Mail: _____

Quantity of MSA Four Gas Calibration Cylinder (58L) Part Number 10045035 Requested: _____

I confirm that the quantity of MSA Four Gas Calibration Cylinder (58L) listed above is the total quantity affected by the April 30, 2021 User Safety Notice and that they have been removed from service and disposed of in accordance with local regulations.

Signature/Date: _____

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
 Product name : PTG-4001
 Formula : (0.0001 - 0.9999 %) Hydrogen Sulfide, (0.0001 - 0.0999 %) Carbon Monoxide, (0.0001 - 3.5 %) Methane, (0.0001 - 23 %) Oxygen in Nitrogen.

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

Use of the substance/mixture : Industrial use; Use as directed.
 Recommended use and restrictions on use : Calibration / Reference

1.3. Details of the supplier of the safety data sheet

Manufactured For:	By:
Mine Safety Appliances Company, Inc.	PortaGas(Praxair,Inc)
1000 Cranberry Woods Drive	1202 E Sam Houston Pkwy S
Cranberry Township, PA 16066	Pasadena, TX 77503
Phone: 724-776-8600	713-928-6477
Info.us@msasafety.com	

Canada:
 Praxair Canada
 1 City Centre Drive, Suite 1200
 Mississauga, Ontario, L5B 1M2
 1-888-257-5149

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
 (collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS US classification

Press. Gas (Comp.) H280
 Aquatic Acute 3 H402

2.2. Label elements

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
 H402 - HARMFUL TO AQUATIC LIFE

Precautionary statements (GHS US) :

P273 - Avoid release to the environment.
 P410+P403 - Protect from sunlight. Store in a well-ventilated place.
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.
 CGA-PG21 - Open valve slowly.
 CGA-PG12 - Do not open valve until connected to equipment prepared for use.
 CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
 CGA-PG10 - Use only with equipment rated for cylinder pressure.
 CGA-PG06 - Close valve after each use and when empty.

PTG-4001

Safety Data Sheet

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).
CGA-MP01 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Get medical advice/attention.
P261 - Avoid breathing gas, vapors

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable.

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Press. Gas (Comp.) H280

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms

:



GHS04

Signal word

: Warning

Hazard statements

: CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

Precautionary statements

: Use and store only outdoors or in a well-ventilated place.
Read and follow the Safety Data Sheet (SDS) before use.
Open valve slowly.
Do not open valve until connected to equipment prepared for use.
Never put cylinders into unventilated areas of passenger vehicles.
Use only with equipment rated for cylinder pressure.
Close valve after each use and when empty.
Use a back flow preventive device in the piping.
Protect from sunlight when ambient temperature exceeds 52°C (125°F).
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.
Avoid breathing gas, vapors

2.3. Other hazards

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

PTG-4001

Safety Data Sheet

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Name	Product identifier	%	Common Name (Synonyms)
Nitrogen	(CAS-No.) 7727-37-9	74.5002 - 100	Nitrogen gas / NITROGEN / Nitrogen, compressed
Oxygen	(CAS-No.) 7782-44-7	0.0001 - 23	Oxygen (dissolved) / Oxygen gas / Oxygen, compressed / Oxygen, dissolved
Methane	(CAS-No.) 74-82-8	0.0001 - 3.5	Marsh gas / Natural gas, refrigerated liquid / Methane, compressed
Hydrogen sulfide	(CAS-No.) 7783-06-4	0.0001 - 1	Hydrogen sulfide (H ₂ S) / Hydrogen sulphide / Sulfur hydride / Sulfureted hydrogen / Dihydrogen sulphide / Hydrogensulfide
Carbon monoxide	(CAS-No.) 630-08-0	0.0001 - 0.0999	Carbon monoxide, compressed / Compressed carbon monoxide / Carbon oxide (CO) / Carbon(II) oxide / Carbon oxide

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.
- First-aid measures after skin contact : Adverse effects not expected from this product.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.
- 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/effects : Effects are due to lack of oxygen. Moderate concentrations may cause headache, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Prolonged exposure to low concentrations of carbon monoxide can kill. Inhalation.

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

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Other information : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

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Safety Data Sheet

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication. Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.
Storage conditions : Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PTG-4001		
ACGIH	Not applicable	
OSHA	Not applicable	
Hydrogen sulfide (7783-06-4)		
ACGIH	ACGIH TLV-TWA (ppm)	1 ppm
ACGIH	ACGIH TLV-STEL (ppm)	5 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
Carbon monoxide (630-08-0)		
ACGIH	ACGIH TLV-TWA (ppm)	25 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	55 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
Oxygen (7782-44-7)		
ACGIH	Not applicable	

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Oxygen (7782-44-7)	
OSHA	Not applicable

Nitrogen (7727-37-9)	
ACGIH	Not applicable
OSHA	Not applicable

Methane (74-82-8)	
ACGIH	Not applicable
OSHA	Not applicable

Hydrogen sulfide (7783-06-4)		
ACGIH	ACGIH TLV-TWA (ppm)	1 ppm
ACGIH	ACGIH TLV-STEL (ppm)	5 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
IDLH	US IDLH (ppm)	100 ppm
NIOSH	NIOSH REL (ceiling) (mg/m ³)	15 mg/m ³
NIOSH	NIOSH REL (ceiling) (ppm)	10 ppm

Alberta	OEL Ceiling (mg/m ³)	21 mg/m ³
Alberta	OEL Ceiling (ppm)	15 ppm
Alberta	OEL TWA (mg/m ³)	14 mg/m ³
Alberta	OEL TWA (ppm)	10 ppm
British Columbia	OEL Ceiling (ppm)	10 ppm
Manitoba	OEL STEL (ppm)	5 ppm
Manitoba	OEL TWA (ppm)	1 ppm
New Brunswick	OEL STEL (mg/m ³)	21 mg/m ³
New Brunswick	OEL STEL (ppm)	15 ppm
New Brunswick	OEL TWA (mg/m ³)	14 mg/m ³
New Brunswick	OEL TWA (ppm)	10 ppm
Newfoundland & Labrador	OEL STEL (ppm)	5 ppm
Newfoundland & Labrador	OEL TWA (ppm)	1 ppm
Nova Scotia	OEL STEL (ppm)	5 ppm
Nova Scotia	OEL TWA (ppm)	1 ppm
Nunavut	OEL Ceiling (mg/m ³)	28 mg/m ³
Nunavut	OEL Ceiling (ppm)	20 ppm
Nunavut	OEL STEL (mg/m ³)	21 mg/m ³
Nunavut	OEL STEL (ppm)	15 ppm
Nunavut	OEL TWA (mg/m ³)	14 mg/m ³
Nunavut	OEL TWA (ppm)	10 ppm
Northwest Territories	OEL STEL (ppm)	15 ppm
Northwest Territories	OEL TWA (ppm)	10 ppm
Ontario	OEL STEL (ppm)	15 ppm
Ontario	OEL TWA (ppm)	10 ppm
Prince Edward Island	OEL STEL (ppm)	5 ppm
Prince Edward Island	OEL TWA (ppm)	1 ppm
Québec	VECD (mg/m ³)	21 mg/m ³

PRAXAIR and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.

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Safety Data Sheet

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Québec	VECD (ppm)	15 ppm
Québec	VEMP (mg/m ³)	14 mg/m ³
Québec	VEMP (ppm)	10 ppm
Saskatchewan	OEL STEL (ppm)	15 ppm
Saskatchewan	OEL TWA (ppm)	10 ppm
Yukon	OEL STEL (mg/m ³)	27 mg/m ³
Yukon	OEL STEL (ppm)	15 ppm
Yukon	OEL TWA (mg/m ³)	15 mg/m ³
Yukon	OEL TWA (ppm)	10 ppm

Carbon monoxide (630-08-0)

ACGIH	ACGIH TLV-TWA (ppm)	25 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	55 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	1200 ppm
NIOSH	NIOSH REL (TWA) (mg/m ³)	40 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	35 ppm
NIOSH	NIOSH REL (ceiling) (mg/m ³)	229 mg/m ³
NIOSH	NIOSH REL (ceiling) (ppm)	200 ppm

Alberta	OEL TWA (mg/m ³)	29 mg/m ³
Alberta	OEL TWA (ppm)	25 ppm
British Columbia	OEL STEL (ppm)	100 ppm
British Columbia	OEL TWA (ppm)	25 ppm
Manitoba	OEL TWA (ppm)	25 ppm
New Brunswick	OEL TWA (mg/m ³)	29 mg/m ³
New Brunswick	OEL TWA (ppm)	25 ppm
Newfoundland & Labrador	OEL TWA (ppm)	25 ppm
Nova Scotia	OEL TWA (ppm)	25 ppm
Nunavut	OEL STEL (mg/m ³)	460 mg/m ³
Nunavut	OEL STEL (ppm)	190 ppm
Nunavut	OEL TWA (mg/m ³)	57 mg/m ³
Nunavut	OEL TWA (ppm)	25 ppm
Northwest Territories	OEL STEL (ppm)	190 ppm
Northwest Territories	OEL TWA (ppm)	25 ppm
Ontario	OEL TWA (ppm)	25 ppm
Prince Edward Island	OEL TWA (ppm)	25 ppm
Québec	VECD (mg/m ³)	230 mg/m ³
Québec	VECD (ppm)	200 ppm
Québec	VEMP (mg/m ³)	40 mg/m ³
Québec	VEMP (ppm)	35 ppm
Saskatchewan	OEL STEL (ppm)	190 ppm
Saskatchewan	OEL TWA (ppm)	25 ppm
Yukon	OEL STEL (mg/m ³)	440 mg/m ³
Yukon	OEL STEL (ppm)	400 ppm
Yukon	OEL TWA (mg/m ³)	55 mg/m ³
Yukon	OEL TWA (ppm)	50 ppm

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Nitrogen (7727-37-9)

Methane (74-82-8)

British Columbia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).

Personal protective equipment : Safety glasses. Gloves.



Eye protection : Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138. Safety shoes: Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Respiratory protection: Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	:
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Vapor pressure	: Not applicable.
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Water: No data available
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

None.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Inhalation
Acute toxicity	: Not classified

PTG-4001	
LD50 oral rat	≈
Hydrogen sulfide (7783-06-4)	
LC50 inhalation rat (ppm)	356 ppm/4h
ATE US (gases)	356 ppmV/4h
Carbon monoxide (630-08-0)	
LC50 inhalation rat (ppm)	3760 ppm/1h
ATE US (gases)	1880 ppmV/4h

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Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
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

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known 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])
LC50 fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

12.2. Persistence and degradability

PTG-4001	
Persistence and degradability	No ecological damage caused by this product.
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.
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.

12.3. Bioaccumulative potential

PTG-4001	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Hydrogen sulfide (7783-06-4)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No data available.
Carbon monoxide (630-08-0)	
Log Kow	Not applicable.

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This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Oxygen (7782-44-7)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
Methane (74-82-8)	
Log Pow	1.09
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

PTG-4001	
Mobility in soil	No data available.
Hydrogen sulfide (7783-06-4)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Carbon monoxide (630-08-0)	
Mobility in soil	No data available.
Oxygen (7782-44-7)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Nitrogen (7727-37-9)	
Mobility in soil	No data available.
Ecology - soil	No ecological damage caused by this product.
Methane (74-82-8)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

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	: Do not attempt to dispose of residual or unused quantities. Return container to supplier.
Product/Packaging disposal recommendations	: Do not attempt to dispose of residual or unused quantities. Return container to supplier.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT	
Transport document description	: UN1956 Compressed gas, n.o.s., 2.2
UN-No.(DOT)	: UN1956
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.
Class (DOT)	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115
Hazard labels (DOT)	: 2.2 - Non-flammable gas



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

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Symbols	: G - Identifies proper shipping name (PSN) requiring the addition of technical name(s) in parentheses following the PSN.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 306;307
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 172.101 HMT, Column 9a)	: 75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 172.101 HMT, Column 9b)	: 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.

Additional information

Emergency Response Guide (ERG) Number	: 126
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.

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG)	: UN1956
Proper Shipping Name (Transportation of Dangerous Goods)	: Compressed Gas, n.o.s.
TDG Primary Hazard Classes	: 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas.
Explosive Limit and Limited Quantity Index	: 0.125L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 75 L

Transport by sea

UN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: COMPRESSED GAS, N.O.S.
Class (IMDG)	: 2 - Gases
Limited quantities (IMDG)	: 120ml
EmS-No. (1)	: F-C
MFAG-No	: 620
EmS-No. (2)	: S-V

Air transport

UN-No. (IATA)	: 1956
Proper Shipping Name (IATA)	: Compressed gas, n.o.s.
Class (IATA)	: 2
Instruction "cargo" (ICAO)	: 200
Instruction "passenger" (ICAO)	: 200
Instruction "passenger" - Limited quantities (ICAO)	: FORBIDDEN
Civil Aeronautics Law	: Gases under pressure/Gases nonflammable nontoxic under pressure

SECTION 15: Regulatory information

15.1. US Federal regulations

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This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

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Listed on the United States SARA Section 302
Subject to reporting requirements of United States SARA Section 313
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
Subject to reporting requirements of United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
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SARA Section 313 - Emission Reporting	1 %
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Carbon monoxide (630-08-0)

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

Methane (74-82-8)

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

15.2. International regulations

CANADA

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Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
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Hydrogen sulfide (7783-06-4)

Listed on the Canadian DSL (Domestic Substances 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
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Carbon monoxide (630-08-0)

Listed on the Canadian DSL (Domestic Substances 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 A - Very toxic material causing other toxic effects
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Oxygen (7782-44-7)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material
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Nitrogen (7727-37-9)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
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Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
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EU-Regulations

Hydrogen sulfide (7783-06-4)

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

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This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Carbon monoxide (630-08-0)

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)

Methane (74-82-8)

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

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

Press. Gas (Comp.) H280

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

No additional information available

National regulations

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 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 the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Carbon monoxide (630-08-0)

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 the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
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)

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

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)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

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U.S. - California - Proposition 65 - Carcinogens List	No
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U.S. - California - Proposition 65 - Developmental Toxicity	Yes
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U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
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U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
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Carbon monoxide (630-08-0)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	Yes	No	No	

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

Carbon monoxide (630-08-0)

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

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

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

SECTION 16: Other information

Revision date : 09/25/2019

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Safety Data Sheet

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Prepared for Canada according to the Hazardous Products Regulation (February 11, 2015).

Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product.

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SDS US_and_Canada

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

MSA Part Numbers: 804770, 813720, 711076, 711058, 10048981, 10048890, 10125695, 10045035, 10048280, 10172319, 10150595