

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

* 1 Identification

· **Product identifier**

· **Trade name: Precision Calibration Gas Mixture**

· **Product number:** G-1115

· **Relevant identified uses of the substance or mixture and uses advised against**

Used for calibration of gas measuring devices. Not suitable for human consumption.

· **Product description**

Calibration gas mixture consisting of Carbon Monoxide, Carbon Dioxide, Hydrogen Sulfide, Methane, Oxygen and Nitrogen.

· **Application of the substance / the mixture** Pressurized gas, requires appropriate regulator to dispense.

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Gasco Affiliates, LLC
320 Scarlett Blvd.
Oldsmar, FL 34677

TELEPHONE NUMBER: (800) 910-0051

FAX NUMBER: (866) 755-8920

E-MAIL: info@gascogas.com

· **Emergency telephone number:**

Inside the US: 1-800-424-9300 (CHEMTREC, 24 hours)

Outside the US: 1-703-527-3887 (CHEMTREC, 24 hours)

* 2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS04 Gas cylinder

Press. Gas H280 Contains gas under pressure; may explode if heated.



GHS08 Health hazard

STOT SE 2 H371 May cause damage to organs.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Simple Asphyxiant May displace oxygen and cause rapid suffocation.

· **Label elements**

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS04



GHS07



GHS08

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Nitrogen
- **Hazard statements**
Contains gas under pressure; may explode if heated.
Harmful if inhaled.
May cause damage to organs.
May displace oxygen and cause rapid suffocation.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a poison center/doctor if you feel unwell.
IF exposed or concerned: Call a poison center/doctor.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Unknown acute toxicity:**
100 percent of the mixture consists of ingredient(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Hazard(s) not otherwise classified (HNOC):** None known

* 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous Components:**

CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; ⚠ STOT SE 2, H371; Simple Asphyxiant	72.5675 - 81.044%
CAS: 630-08-0 RTECS: FG 3500000	Carbon Monoxide ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 3, H331; ⚠ Repr. 1A, H360; ⚠ STOT RE 1, H372; Press. Gas, H280	0.005 - 0.03%
CAS: 124-38-9 RTECS: FF 6400000	Carbon Dioxide ⚠ Press. Gas, H280; Simple Asphyxiant	0.5 - 4%
CAS: 74-82-8 RTECS: PA 1490000	Methane ⚠ Flam. Gas 1, H220; Press. Gas, H280	1.45 - 2.5%

(Contd. on page 3)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	17 - 20.9%
CAS: 7783-06-4	Hydrogen Sulphide ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 2, H330; ⚠ Aquatic Acute 1, H400; Press. Gas, H280	0.001 - 0.0025%

*** 4 First-aid measures****· Description of first aid measures****· General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

In case of unconsciousness, place patient securely on side position for transportation.

· After skin contact:

In cases of contact with liquified material, frostbite may occur. Immerse frostbite in cool-warm water and seek medical attention.

Wash with soap and water.

If skin irritation occurs, consult a doctor.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing:

Not a normal route of entry.

If swallowed and symptoms occur, consult a doctor.

· Information for doctor:**· Most important symptoms and effects, both acute and delayed:** No further relevant information available.**· Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

*** 5 Fire-fighting measures****· Extinguishing media****· Suitable extinguishing agents:** Use water spray to cool fire-exposed containers.**· Special hazards arising from the substance or mixture**

Closed containers may explode when exposed to extreme heat.

If incinerated, product will release the following toxic fumes: Oxides of Carbon, Nitrogen (NOx) and Sulfur.

· Advice for firefighters

This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire. Firefighters should be aware of the presence of Hydrogen Sulfide in this gas mixture, which can cause significant health effects.

· Protective equipment:

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

*** 6 Accidental release measures****· Personal precautions, protective equipment and emergency procedures**

In a confined area, NIOSH approved respiratory protection may be required.

Treat any fumes as toxic.

Ensure adequate ventilation

Keep people at a distance and stay upwind.

· Environmental precautions: Inform authorities in case of gas release.

(Contd. on page 4)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Dispose of the collected material according to regulations.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

*** 7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms due to the potential for oxygen deficiency (simple asphyxiation). Do not attempt to adjust, repair or in any other way modify the cylinders containing this gas mixture. If there is a malfunction or another type of operational problem, contact nearest distributor immediately.
- **Information about protection against explosions and fires:**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.
Do not cut, grind or weld on container that contains or contained product.
Do not spray on a naked flame or any incandescent material.
- **Conditions for safe storage, including any incompatibilities**
Store away from strong oxidizing agents, strong bases, phosphorous, organic materials, powdered metals and Zinc.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Cylinders should be firmly secured to prevent falling or being knocked over. Cylinders must be protected from the environment, and preferably kept at room temperature. Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a "first-in, first-out" inventory system to prevent full containers from being stored for long periods of time.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

*** 8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

Components with occupational exposure limits:**7727-37-9 Nitrogen**

TLV withdrawn TLV, see App. F; simple asphyxiant

(Contd. on page 5)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

74-82-8 Methane	
TLV	refer to Appendix F, 1000ppm
630-08-0 Carbon Monoxide	
PEL	Long-term value: 55 mg/m ³ , 50 ppm
REL	Long-term value: 40 mg/m ³ , 35 ppm Ceiling limit value: 229 mg/m ³ , 200 ppm
TLV	Long-term value: 29 mg/m ³ , 25 ppm BEI
124-38-9 Carbon Dioxide	
PEL	Long-term value: 9000 mg/m ³ , 5000 ppm
REL	Short-term value: 54.000 mg/m ³ , 30.000 ppm Long-term value: 9000 mg/m ³ , 5000 ppm
TLV	Short-term value: 54.000 mg/m ³ , 30.000 ppm Long-term value: 9000 mg/m ³ , 5000 ppm
7783-06-4 Hydrogen Sulphide	
PEL	Ceiling limit value: 20; 50* ppm *10-min peak; once per 8-hr shift
REL	Ceiling limit value: 15* mg/m ³ , 10* ppm *10-min
TLV	Short-term value: 7 mg/m ³ , 5 ppm Long-term value: 1.4 mg/m ³ , 1 ppm

· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· **Breathing equipment:**



Suitable respiratory protective device recommended.

· **Protection of hands:** Not required.

· **Eye protection:** Not necessary under normal conditions.

* 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Gaseous

Color:

Clear, colorless

· **Odor:**

Mild

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

· **Change in condition**

Melting point/Melting range:

Not determined.

(Contd. on page 6)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **Boiling point/Boiling range:** Not determined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Not determined.
- **Explosion limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Vapor pressure:** Not determined.
- **Density:**
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
- **Dynamic:** Not determined.
- **Kinematic:** Not determined.
- **Solvent content:**
- **Organic solvents:** 0.0 %
- **Other information** No further relevant information available.

*** 10 Stability and reactivity**

- **Reactivity** Stable under normal conditions
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Strong oxidizing agents, strong bases, phosphorous, organic materials, powdered metals and Zinc.
- **Hazardous decomposition products:** Oxides of Carbon, Nitrogen (NOx) and Sulfur.

*** 11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

630-08-0 Carbon Monoxide

Inhalative LC50/4 h 7520 mg/l (rat)

74-82-8 Methane

Inhalative LC50/4 h 217 mg/l (mouse)

(Contd. on page 7)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

7783-06-4 Hydrogen Sulphide		
Inhalative	LC50/4 h	634 mg/l (mouse) 444 mg/l (rat)
	LC50/96 hours	0.016 mg/l (Pimephales)

- **Primary irritant effect:**

- **on the skin:** No irritating effect.

- **on the eye:** No irritating effect.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

- Group 1 - Carcinogenic to humans

- Group 2A - Probably carcinogenic to humans

- Group 2B - Possibly carcinogenic to humans

- Group 3 - Not classifiable as to its carcinogenicity to humans

- Group 4 - Probably not carcinogenic to humans

None of the ingredients are listed.

- **NTP (National Toxicology Program)**

None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

* 12 Ecological information

- **Toxicity** The hazards for the aquatic environment are unknown.

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:** Generally not hazardous for water.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Release all residual gas pressure in a well ventilated area. Verify the cylinder is completely empty (0 PSIG).

Remove or cover any hazard labels. Return empty supplier for recycling.

NOTE: Check with the local waste authority before placing any gas cylinder into a waste container for pickup.

GASCO discourages the consumer to return all cylinders.

- **Waste disposal key:** The U.S. EPA has not published waste numbers for this product's components.

(Contd. on page 8)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **Uncleaned packagings:**
- **Recommendation:** Return cylinder and unused product to supplier.

*** 14 Transport information**

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1956
- **UN proper shipping name**
- **DOT** Compressed gas, n.o.s.
- **ADR** UN1956 Compressed gas, n.o.s.
- **IMDG, IATA** COMPRESSED GAS, N.O.S.
- **Transport hazard class(es)**

- **DOT**



- **Class** 2.2
- **Label** 2.2

- **ADR**



- **Class** 2.2 1A
- **Label** 2.2

- **IMDG, IATA**



- **Class** 2.2
- **Label** 2.2
- **Packing group** -
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user** Not applicable.
- **Danger code (Kemler):** 20
- **EMS Number:** F-C,S-V
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **Transport/Additional information:**
- **DOT**
- **Quantity limitations** On passenger aircraft/rail: 75 kg
On cargo aircraft only: 150 kg

(Contd. on page 9)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **ADR**
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

- **IMDG**
- **Limited quantities (LQ)** 120 ml
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
- **UN "Model Regulation":** UN1956, Compressed gas, n.o.s., 2.2

***15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

7783-06-4 Hydrogen Sulphide

- **Section 313 (Specific toxic chemical listings):**

7783-06-4 Hydrogen Sulphide

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **California Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

7783-06-4 Hydrogen Sulphide |

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS04 GHS07 GHS08

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Nitrogen
- **Hazard statements**
Contains gas under pressure; may explode if heated.
Harmful if inhaled.
May cause damage to organs.
May displace oxygen and cause rapid suffocation.
- **Precautionary statements**
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a poison center/doctor if you feel unwell.
IF exposed or concerned: Call a poison center/doctor.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· **State Right to Know**

CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; ⚠ STOT SE 2, H371; Simple Asphyxiant	72.5675 - 81.044%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	17 - 20.9%
CAS: 74-82-8 RTECS: PA 1490000	Methane ⚠ Flam. Gas 1, H220; Press. Gas, H280	1.45 - 2.5%
CAS: 630-08-0 RTECS: FG 3500000	Carbon Monoxide ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 3, H331; ⚠ Repr. 1A, H360; STOT RE 1, H372; Press. Gas, H280	0.005 - 0.03%
CAS: 124-38-9 RTECS: FF 6400000	Carbon Dioxide ⚠ Press. Gas, H280; Simple Asphyxiant	0.5 - 4%
CAS: 7783-06-4	Hydrogen Sulphide ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 2, H330; ⚠ Aquatic Acute 1, H400; Press. Gas, H280	0.001 - 0.0025%
All ingredients are listed.		

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* **16 Other information**· **Relevant phrases**

Gasco Affiliates, LLC, makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Gasco Affiliates, LLC shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

- **Date of preparation / last revision** 05/28/2015 / -

(Contd. on page 11)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/28/2015

Reviewed on 05/28/2015

Trade name: Precision Calibration Gas Mixture

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Gas 1: Flammable gases, Hazard Category 1
Oxid. Gas 1: Oxidising Gases, Hazard Category 1
Press. Gas: Gases under pressure: Compressed gas
Acute Tox. 2: Acute toxicity, Hazard Category 2
Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Repr. 1A: Reproductive toxicity, Hazard Category 1A
STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2
STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

· *** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106