

## Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 06/23/2020

Reviewed on 06/23/2020

### \* 1 Identification

· **Product Identifier**

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

· **Product Number:** G-19816A

· **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, Methane, Ethylene, Ethane, Acetylene and Nitrogen.

· **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: 1-833-723-3267 (Chemtrec, 24 hours)

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

### 2 Hazard(s) Identification

· **Classification of the substance or mixture:**



Flame

Flam. Gas 1      H220 Extremely flammable gas.



Gas cylinder

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

Simple Asphyxiant      May displace oxygen and cause rapid suffocation.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Danger

· **Hazard statements:**

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

· **Precautionary statements:**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

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- **Unknown acute toxicity:**  
100 % of the mixture consists of component(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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



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

### 3 Composition/Information on Ingredients

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

#### Dangerous Components:

CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	89.8499-99.6%
CAS: 124-38-9 RTECS: FF 6400000	Carbon Dioxide ⚠ Press. Gas, H280; Simple Asphyxiant	0.1-2%
CAS: 74-82-8 RTECS: PA 1490000	Methane ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; Simple Asphyxiant	0.1-2%
CAS: 74-85-1 RTECS: KU 5340000	Ethylene ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ STOT SE 3, H336	0.1-2%
CAS: 74-84-0 RTECS: KH 3800000	Ethane ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	0.1-2%
CAS: 74-86-2 RTECS: AO 9600000	Acetylene ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280	0.1-2%
CAS: 630-08-0 RTECS: FG 3500000	Carbon Monoxide ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ Acute Tox. 3, H331; ⚠ Repr. 1A, H360; STOT RE 1, H372	0.1-0.1501%

### 4 First-Aid Measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in the side position for transportation.
- **After skin contact:**  
Generally, the product does not irritate the skin.  
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.

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If skin irritation occurs, consult a doctor.

· **After eye contact:**

Not anticipated under normal use.

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 fire fighting measures that suit the environment.

Use water spray to cool fire-exposed containers.

· **For safety reasons unsuitable extinguishing agents:** No further relevant information.

· **Special hazards arising from the substance or mixture:**

Closed containers may explode when exposed to extreme heat.

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

· **Advice for firefighters**

This gas mixture is flammable; and, containers, when involved in fire, may rupture or burst in the heat of the fire.

· **Special protective equipment for firefighters:**

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:**

Treat any fumes as toxic.

Keep away from ignition sources

Ensure adequate ventilation.

Keep people at a distance and stay upwind.

Wear protective equipment. Keep unprotected persons away.

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

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

· **Methods and material for containment and cleaning up:**

Dispose of 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

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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.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep protective respiratory device available.

· **Conditions for safe storage, including any incompatibilities**

Store away from strong oxidizing agents, alkali metals, copper, silver and mercury.

· **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-on, 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:** 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

**124-38-9 Carbon Dioxide**

PEL | Long-term value: 9000 mg/m<sup>3</sup>, 5000 ppm

REL | Short-term value: 54,000 mg/m<sup>3</sup>, 30,000 ppm

Long-term value: 9000 mg/m<sup>3</sup>, 5000 ppm

TLV | Short-term value: 54,000 mg/m<sup>3</sup>, 30,000 ppm

Long-term value: 9000 mg/m<sup>3</sup>, 5000 ppm

**74-82-8 Methane**

TLV | refer to Appendix F in TLVs and BEIs book

**74-85-1 Ethylene**

TLV | Long-term value: 230 mg/m<sup>3</sup>, 200 ppm

**74-84-0 Ethane**

TLV | Refer to Appendix F in TLVs & BEIs book; NIC-EX

**74-86-2 Acetylene**

REL | Ceiling limit value: 2662 mg/m<sup>3</sup>, 2500 ppm

TLV | Simple asphyxiant; NIC-EX

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<b>630-08-0 Carbon Monoxide</b>	
PEL	Long-term value: 55 mg/m <sup>3</sup> , 50 ppm
REL	Long-term value: 40 mg/m <sup>3</sup> , 35 ppm Ceiling limit value: 229 mg/m <sup>3</sup> , 200 ppm
TLV	Long-term value: 29 mg/m <sup>3</sup> , 25 ppm BEI
· <b>Ingredients with biological limit values:</b>	
<b>630-08-0 Carbon Monoxide</b>	
BEI	3.5 % of hemoglobin blood end of shift Carboxyhemoglobin (background, nonspecific)
	20 ppm end-exhaled air end of shift Carbon monoxide (background, nonspecific)

· **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.

Immediately remove all soiled and contaminated clothing and wash before reuse.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Breathing equipment:**



Suitable respiratory protective device recommended.

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

· **Material of gloves:** Not required.

· **Penetration time of glove material:** Not applicable.

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

· **Body protection:** Not required.

## 9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

**Form:** Gaseous

**Color:** Clear, colorless

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** Not determined.

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- **Boiling point/Boiling range:** Not determined.
- **Flash point:** Not determined.
- **Flammability (solid, gaseous):** Flammable.
- **Ignition temperature:** Not applicable
- **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:** No further relevant information available.
- **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, alkali metals, copper, silver and mercury.
- **Hazardous decomposition products:** Carbon Oxides and Nitrogen Oxides (NOx).

### 11 Toxicological Information

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

#### · LD/LC50 values that are relevant for classification:

##### 74-82-8 Methane

Inhalative	LC50/4 h	217 mg/l (Mouse)
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##### 630-08-0 Carbon Monoxide

Inhalative	LC50/4 h	7520 mg/l (Rat)
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- **Primary irritant effect:**
- **On the skin:** No irritating effect.

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- **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

74-85-1 Ethylene

3

- **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 cylinder for recycling.  
NOTE: Check with the local waste authority before placing any gas cylinder into waste container for pickup.  
GASCO encourages the consumer to return all cylinders.
- **Waste disposal key:** The U.S. EPA has not published waste disposal numbers for this product's components.
- **Uncleaned packaging**
- **Recommendation:** Return cylinder and unused product to supplier.

### 14 Transport Information

- **UN-Number:**
- **DOT, ADR/ADN, IMDG, IATA** UN1954
- **UN proper shipping name:**
- **DOT** Compressed gas, flammable, n.o.s.
- **ADR/ADN** UN1954 Compressed gas, flammable, n.o.s.

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- **IMDG, IATA** COMPRESSED GAS, FLAMMABLE, N.O.S.
- **Transport hazard class(es):**
- **DOT**



- **Class:** 2.1
- **Label:** 2.1

· **ADR/ADN**

- **Class:** 2.1 1F
- **Label:** 2.1

· **IMDG, IATA**

- **Class:** 2.1
- **Label:** 2.1
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Hazard identification number (Kemler code):** 23
- **EMS Number:** F-D,S-U
- **Stowage Category** D
- **Stowage Code** SW2 Clear of living quarters.
- **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: Forbidden  
On cargo aircraft only: 150 kg

· **ADR/ADN**

- **Excepted quantities (EQ):** Code: E0  
Not permitted as Excepted Quantity

· **IMDG**

- **Limited quantities (LQ):** 0
- **Excepted quantities (EQ):** Code: E0  
Not permitted as Excepted Quantity
- **UN "Model Regulation":** UN 1954 COMPRESSED GAS, FLAMMABLE, N.O.S., 2.1

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### 15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

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

None of the ingredients are listed.

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

74-85-1 Ethylene

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

7727-37-9 Nitrogen

124-38-9 Carbon Dioxide

74-82-8 Methane

74-85-1 Ethylene

74-84-0 Ethane

74-86-2 Acetylene

630-08-0 Carbon Monoxide

- **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:**

630-08-0 Carbon Monoxide

- **New Jersey Right-to-Know List:**

All ingredients are listed.

- **New Jersey Special Hazardous Substance List:**

74-82-8 Methane

F4

74-85-1 Ethylene

F4, R2

74-84-0 Ethane

F4

74-86-2 Acetylene

F4, R3

630-08-0 Carbon Monoxide

TE, F4

- **Pennsylvania Right-to-Know List:**

7727-37-9 Nitrogen

124-38-9 Carbon Dioxide

74-82-8 Methane

74-85-1 Ethylene

74-86-2 Acetylene

630-08-0 Carbon Monoxide

- **Pennsylvania Special Hazardous Substance List:**

74-85-1 Ethylene

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630-08-0	Carbon Monoxide		E
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· **Carcinogenic categories:**

· <b>EPA (Environmental Protection Agency):</b>			
None of the ingredients are listed.			

· **TLV (Threshold Limit Value established by ACGIH):**

74-85-1	Ethylene		A4
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· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.			
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· **GHS label elements**

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

· **Hazard pictograms:**



· **Signal word:** Danger

· **Hazard statements:**

H220 Extremely flammable gas.  
 H280 Contains gas under pressure; may explode if heated.  
 May displace oxygen and cause rapid suffocation.

· **Precautionary statements:**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P381 Eliminate all ignition sources if safe to do so.  
 P410+P403 Protect from sunlight. Store in a well-ventilated place.

· **National regulations:**

None of the ingredients are listed.			
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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other Information

· **Relevant phrases:**

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· **Date of last revision/ revision number:** 06/23/2020 / -

· **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  
 PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety and Health  
OSHA: Occupational Safety & Health Administration  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
BEL: Biological Exposure Limit  
Flam. Gas 1: Flammable gases – Category 1  
Press. Gas: Gases under pressure – Compressed gas  
Press. Gas: Gases under pressure – Dissolved gas  
Acute Tox. 3: Acute toxicity – Category 3  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B  
Repr. 1A: Reproductive toxicity – Category 1A  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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

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