

Safety Data Sheet (SDS)

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

Issue date 06/21/2020

Reviewed on 06/21/2020

* 1 Identification

· **Product Identifier**

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

· **Product Number:** G-11215

· **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 Hydrogen Sulfide, Benzene, Toluene, Oxygen 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:**



Gas cylinder

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



Acute Tox. 4 H332 Harmful if inhaled.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Warning

· **Hazard statements:**

H280 Contains gas under pressure; may explode if heated.

H332 Harmful if inhaled.

· **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P271 Use only outdoors or in a well-ventilated area.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a poison center/doctor if you feel unwell.

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

· **Unknown acute toxicity:**

100 % of the mixture consists of component(s) of unknown toxicity.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

- **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	78.9953-79.9988%
CAS: 7783-06-4	Hydrogen Sulfide ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ Acute Tox. 2, H330; ⚠ Aquatic Acute 1, H400	0.001-0.0025%
CAS: 71-43-2 RTECS: CY 1400000	Benzene ⚠ Flam. Liq. 2, H225; ⚠ Muta. 1B, H340; Carc. 1A, H350; STOT RE 1, H372; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	0.0001-0.001%
CAS: 108-88-3 RTECS: XS 5250000	Toluene ⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; STOT SE 3, H336	0.0001-0.0012%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	20-21%

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.
If skin irritation occurs, consult a doctor.
- **After eye contact:**
Not anticipated under normal use.

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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 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.

· **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.

Ensure adequate ventilation.

Keep people at a distance and stay upwind.

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.

· **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.

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

Store away from strong oxidizing agents, strong bases, phosphorous, organic materials and powdered metals, Alkali metals, Alkaline Earth metals, Alkali metal oxides, 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-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

108-88-3 Toluene

PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV	Long-term value: 75 mg/m ³ , 20 ppm BEI

71-43-2 Benzene

PEL	Short-term value: 15* mg/m ³ , 5* ppm Long-term value: 3* mg/m ³ , 1* ppm *table Z-2 for exclusions in 29CFR1910.1028(d)
REL	Short-term value: 1 ppm Long-term value: 0.1 ppm See Pocket Guide App. A
TLV	Short-term value: 8 mg/m ³ , 2.5 ppm Long-term value: 1.6 mg/m ³ , 0.5 ppm Skin; BEI

7783-06-4 Hydrogen Sulfide

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

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Trade Name: Precision Calibration Gas Mixture

TLV	Short-term value: 7 mg/m ³ , 5 ppm Long-term value: 1.4 mg/m ³ , 1 ppm
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· **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.

· **Breathing equipment:**



Suitable respiratory protective device recommended.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**



Protective work clothing

9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

Form:

Gaseous

Color:

Clear, colorless

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- **Odor:** Rotten
- **Odor threshold:** Not determined.
- **pH-value:** Not available
- **Change in condition**
 - Melting point/Melting range:** Not determined.
 - Boiling point/Boiling range:** Not determined.
- **Flash point:** None
- **Flammability (solid, gaseous):** Not determined.
- **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.
- **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, strong bases, phosphorous, organic materials and powdered metals, Alkali metals, Alkaline Earth metals, Alkali metal oxides, Zinc.
- **Hazardous decomposition products:** Carbon Oxides, Nitrogen Oxides (NOx) and Sulfur Oxides.

11 Toxicological Information

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

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

7783-06-4 Hydrogen Sulfide

Inhalative	LC50/4 h	634 mg/l (Mouse)
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		444 mg/l (Rat)
	LC50/96 hours	0.016 mg/l (Pimephales)
71-43-2 Benzene		
Oral	LD50	2990 mg/kg (Rat)
Dermal	LD50	8263 mg/kg (Rabbit)
Inhalative	LC50/4 h	44.7 mg/l (Rat)
108-88-3 Toluene		
Oral	LD50	5000 mg/kg (Rat)
Dermal	LD50	12124 mg/kg (Rabbit)
Inhalative	LC50/4 h	12.5-28.8 mg/l (Rat)

- **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

108-88-3	Toluene	3
71-43-2	Benzene	1
· NTP (National Toxicology Program):		
71-43-2	Benzene	K
· OSHA-Ca (Occupational Safety & Health Administration):		
71-43-2	Benzene	

12 Ecological Information

- **Toxicity:**

- **Aquatic toxicity:**

71-43-2 Benzene

EC50 29.00 mg/l (Green algae)

22.00 mg/l (Water flea)

108-88-3 Toluene

EC50 10 mg/l (Green algae)

8.0 mg/l (Water flea)

- **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:** Not known to be hazardous to water.

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- **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** UN1956
- **UN proper shipping name:**
- **DOT** Compressed gas, n.o.s.
- **ADR/ADN** 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/ADN**

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

· **IMDG, IATA**

- **Class:** 2.2
- **Label:** 2.2
- **Packing group:**
- **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.

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Trade Name: Precision Calibration Gas Mixture

- **Special precautions for user:** Not applicable.
 - **Hazard identification number (Kemler code):** 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
-
- **ADR/ADN**
 - **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 (Superfund Amendments and Reauthorization):**

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

7783-06-4	Hydrogen Sulfide
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- **Section 313 (Specific toxic chemical listings):**

7783-06-4	Hydrogen Sulfide
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108-88-3	Toluene
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71-43-2	Benzene
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- **TSCA (Toxic Substances Control Act):**

7727-37-9	Nitrogen
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7782-44-7	Oxygen
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7783-06-4	Hydrogen Sulfide
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108-88-3	Toluene
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71-43-2	Benzene
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- **California Proposition 65:**

- **Chemicals known to cause cancer:**

71-43-2	Benzene
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- **Chemicals known to cause reproductive toxicity for females:**

108-88-3	Toluene
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- **Chemicals known to cause reproductive toxicity for males:**

71-43-2	Benzene
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- **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

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· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

7783-06-4	Hydrogen Sulfide	I
108-88-3	Toluene	II
71-43-2	Benzene	A, K/L

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

108-88-3	Toluene	A4
71-43-2	Benzene	A1

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

71-43-2	Benzene
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· **GHS label elements**

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

· **Hazard pictograms:**



· **Signal word:** Warning

· **Hazard statements:**

H280 Contains gas under pressure; may explode if heated.

H332 Harmful if inhaled.

· **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P271 Use only outdoors or in a well-ventilated area.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a poison center/doctor if you feel unwell.

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

· **National regulations:**

None of the ingredients are listed.

· **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:** 06/21/2020 / -

· **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)

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LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
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
Flam. Gas 1: Flammable gases – Category 1
Oxid. Gas 1: Oxidizing gases – Category 1
Press. Gas: Gases under pressure – Compressed gas
Press. Gas: Gases under pressure – Dissolved gas
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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

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