

## Safety Data Sheet (SDS)

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

Issue date 12/09/2015

Reviewed on 12/09/2015

### \* 1 Identification

- **Product Identifier**
- **Trade name: Precision Calibration Gas Mixture**
- **Product Number:** G-4715
- **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 Ammonia, 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: 1-800-424-9300 (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.



GHS07

Skin Irrit. 2      H315 Causes skin irritation.

Eye Irrit. 2A      H319 Causes serious eye irritation.

Aquatic Acute 3      H402 Harmful to aquatic life.

- **Label elements:**

- **GHS label elements**

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

- **Hazard pictograms:**



GHS04      GHS07

- **Signal word:** Warning

- **Hazard statements:**

Contains gas under pressure; may explode if heated.

Causes skin irritation.

Causes serious eye irritation.

Harmful to aquatic life.

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**Trade name: Precision Calibration Gas Mixture****Precautionary statements:**

Wear protective gloves.

Wear eye protection / face protection.

Avoid release to the environment.

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Protect from sunlight. Store in a well-ventilated place.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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

HEALTH	1	Health = 1
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 non-hazardous additions.**Dangerous Components:**

CAS: 7664-41-7 RTECS: BO 0875000	Ammonia, anhydrous ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H331; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Flam. Gas 2, H221; Press. Gas, H280	0.0005 - 2%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	20-21%
CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	77-79.9995%

**\* 4 First-Aid Measures****Description of first aid measures:****After inhalation:**

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

In case of unconsciousness place patient stably in side position for transportation.

**After skin contact:**

Immediately wash skin with soap and plenty of water for at least 20 minutes.

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

If skin irritation occurs, consult a doctor.

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- **After eye contact:**  
Rinse opened eye for at least 15 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.
- **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 Nitrogen (NOx).
- **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.
- **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.  
Ensure adequate ventilation.  
Keep people at a distance and stay upwind.  
Treat any fumes as toxic.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
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.
- **Conditions for safe storage, including any incompatibilities:**  
Store away from strong oxidizing agents, Zinc, Copper, Silver/Silver Oxides, Cadmium/Cadmium Oxides, Alcohols, acids, Halogens and aldehydes.

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- **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:**

No further relevant information available..

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:**

#### 7664-41-7 Ammonia, anhydrous

PEL Long-term value: 35 mg/m<sup>3</sup>, 50 ppm

REL Short-term value: 27 mg/m<sup>3</sup>, 35 ppm  
Long-term value: 18 mg/m<sup>3</sup>, 25 ppm

TLV Short-term value: 24 mg/m<sup>3</sup>, 35 ppm  
Long-term value: 17 mg/m<sup>3</sup>, 25 ppm

#### 7727-37-9 Nitrogen

TLV withdrawn TLV, see App. F; simple asphyxiant

- **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.

Avoid contact with the eyes and skin.

- **Breathing equipment:**



Suitable respiratory protective device recommended.

- **Protection of hands:**



Protective gloves

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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

## \* 9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

**Form:** Gaseous

**Color:** Clear, colorless

· **Odor:** Ammonia

· **Odor threshold:** Not determined.

· **pH-value:** Acidic

· **Change in condition**

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

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

· **Flash point:** None

· **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.

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**Trade name: Precision Calibration Gas Mixture****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, Zinc, Copper, Silver/Silver Oxides, Cadmium/Cadmium Oxides, Alcohols, acids, Halogens and aldehydes.
- **Hazardous decomposition products:** Nitrogen Oxides (NOx).

**\* 11 Toxicological Information****Information on toxicological effects:****Acute toxicity:****LD/LC50 values that are relevant for classification:****7664-41-7 Ammonia, anhydrous**

Oral LD50 350 mg/kg (rat)

Inhalative LC50/4 h 2000 mg/l (rat)

**Primary irritant effect:****On the skin:** Irritant to skin and mucous membranes.**On the eye:**

Irritating effect.

Causes serious eye irritation.

**Additional toxicological information:**

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

Irritant

**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.

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**Trade name: Precision Calibration Gas Mixture****· 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:** Not known to be hazardous to 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 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

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**Trade name: Precision Calibration Gas Mixture**· **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· **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 (Superfund Amendments and Reauthorization):**· **Section 355 (extremely hazardous substances):**

7664-41-7 Ammonia, anhydrous

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

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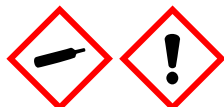
Reviewed on 12/09/2015

**Trade name: Precision Calibration Gas Mixture**

· <b>TSCA (Toxic Substances Control Act):</b>
All ingredients are listed.
· <b>California Proposition 65:</b>
· <b>Chemicals known to cause cancer:</b>
None of the ingredients are listed.
· <b>Chemicals known to cause reproductive toxicity for females:</b>
None of the ingredients are listed.
· <b>Chemicals known to cause reproductive toxicity for males:</b>
None of the ingredients are listed.
· <b>Chemicals known to cause developmental toxicity:</b>
None of the ingredients are listed.
· <b>Carcinogenic categories:</b>
· <b>EPA (Environmental Protection Agency):</b>
None of the ingredients are listed.
· <b>TLV (Threshold Limit Value established by ACGIH):</b>
None of the ingredients are listed.
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health):</b>
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

· **Signal word:** Warning· **Hazard statements:**

Contains gas under pressure; may explode if heated.

Causes skin irritation.

Causes serious eye irritation.

Harmful to aquatic life.

· **Precautionary statements:**

Wear protective gloves.

Wear eye protection / face protection.

Avoid release to the environment.

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Protect from sunlight. Store in a well-ventilated place.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Trade name: Precision Calibration Gas Mixture**

· <b>National regulations:</b>		
The product is subject to be classified according with the latest version of the regulations on hazardous substances.		
· <b>State Right to Know:</b>		
CAS: 7664-41-7 RTECS: BO 0875000	Ammonia, anhydrous ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H331; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Flam. Gas 2, H221; Press. Gas, H280	0.0005-2%
CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	77-79.9995%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	20-21%
All 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 preparation / last revision:** 12/09/2015 / -· **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  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 Flam. Gas 2: Flammable gases, Hazard Category 2  
 Oxid. Gas 1: Oxidising Gases, Hazard Category 1  
 Press. Gas: Gases under pressure: Compressed gas  
 Flam. Liq. 3: Flammable liquids, Hazard Category 3  
 Acute Tox. 3: Acute toxicity, Hazard Category 3  
 Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B  
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
 Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A  
 Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1  
 Aquatic Acute 3: Hazardous to the aquatic environment - AcuteHazard, Category 3

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

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