

## Safety Data Sheet (SDS)

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

Issue date 05/29/2015

Reviewed on 05/29/2015

### \* 1 Identification

· **Product identifier**

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

· **Product number:** G-5415

· **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 Phosphine 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.



GHS08 Health hazard

STOT SE 2            H371 May cause damage to organs.

Simple Asphyxiant            May displace oxygen and cause rapid suffocation.

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS04    GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**

Nitrogen

· **Hazard statements**

Contains gas under pressure; may explode if heated.

May cause damage to organs.

May displace oxygen and cause rapid suffocation.

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

Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wash thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 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	99.99 - 99.99999%
CAS: 7803-51-2 RTECS: SY 7525000	Phosphine ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 2, H330; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Press. Gas, H280	0.00001 - 0.01%

**\* 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 securely on 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.

**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.

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- **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 (NO<sub>x</sub>) and Phosphorous.
- **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:** No special measures required.
- **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, halogens, halogenated hydrocarbons, acids, and Aluminum and its alloys.

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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:** 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

##### 7803-51-2 Phosphine

PEL	Long-term value: 0.4 mg/m <sup>3</sup> , 0.3 ppm
REL	Short-term value: 1 mg/m <sup>3</sup> , 1 ppm Long-term value: 0.4 mg/m <sup>3</sup> , 0.3 ppm
TLV	Short-term value: (1.4) mg/m <sup>3</sup> , (1) ppm Long-term value: (0.42) mg/m <sup>3</sup> , (0.3) NIC-0.1 ppm Ceiling limit value: NIC-0.5 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.  
Avoid contact with the eyes and skin.  
Do not eat or drink while handling product.  
Wash hands before breaks and at the end of work.
- **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.

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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

- **Odor:** Rotten fish

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

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

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

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Product is not flammable.

- **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.

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**Trade name: Precision Calibration Gas Mixture**

- **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, halogens, halogenated hydrocarbons, acids, and Aluminum and its alloys.
- **Hazardous decomposition products:** Nitrogen Oxides (NO<sub>x</sub>) and Phosphorous Oxides.

**\* 11 Toxicological information**

- **Information on toxicological effects** The toxicity of this product is unknown.
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Causes skin irritation
- **on the eye:** Direct contact may cause eye irritation.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:
- **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.

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

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

7803-51-2 Phosphine

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

7803-51-2 Phosphine

· **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.

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**Trade name: Precision Calibration Gas Mixture**

· <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.

· **Carcinogenic categories**

· <b>EPA (Environmental Protection Agency)</b>
7803-51-2   Phosphine
D

· <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 substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS04 GHS08

· **Signal word** Warning· **Hazard-determining components of labeling:**

Nitrogen

· **Hazard statements**

Contains gas under pressure; may explode if heated.

May cause damage to organs.

May displace oxygen and cause rapid suffocation.

· **Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

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.

· <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: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; ⚠ STOT SE 2, H371; Simple Asphyxiant	99.99 - 99.99999%
CAS: 7803-51-2 RTECS: SY 7525000	Phosphine ⚠ Flam. Gas 1, H220; ⚠ Acute Tox. 2, H330; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Press. Gas, H280	0.00001 - 0.01%
All ingredients are listed.		

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

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### \* 16 Other information

· **Relevant phrases**

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· **Date of preparation / last revision** 05/29/2015 / -

· **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)

Flam. Gas 1: Flammable gases, Hazard Category 1

Press. Gas: Gases under pressure: Compressed gas

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

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

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