

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-5315

· **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 Pentane, 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.



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 product 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.

(Contd. on page 2)

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**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:

99.3 percent of the mixture consists of ingredient(s) of unknown toxicity.

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

HEALTH	0	Health = 0
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	78.35 - 87.9975%
CAS: 109-66-0 RTECS: RZ 9450000	Pentane ◊ Flam. Liq. 2, H225; ◊ Asp. Tox. 1, H304; ◊ Aquatic Chronic 2, H411; ◊ STOT SE 3, H336	0.0025 - 0.75%
CAS: 7782-44-7	Oxygen ◊ Oxid. Gas 1, H270; ◊ Press. Gas, H280	12 - 20.9%

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

Generally the product does not irritate with 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:

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.

(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

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.

- **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 and 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**

Treat any fumes as toxic.

Keep away from ignition sources

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 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.

(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**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, phosphorous, organic materials and powdered metals.

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

109-66-0 Pentane

PEL | Long-term value: 2950 mg/m³, 1000 ppm

REL | Long-term value: 350 mg/m³, 120 ppm
Ceiling limit value: 1800* mg/m³, 610* ppm
*15-min

TLV | Long-term value: 2950 mg/m³, 1000 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.

Wash hands before breaks and at the end of work.

Breathing equipment:

Not necessary if room is well-ventilated.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure, use respiratory protective device that is independent of circulating air.

Protection of hands: Not required.**Eye protection:** Not necessary under normal conditions.

(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*** 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.**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.**· 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, phosphorous, organic materials and powdered metals.**· Hazardous decomposition products:** Carbon Oxides and Nitrogen Oxides (NOx).

(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*** 11 Toxicological information**· **Information on toxicological effects**· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:****109-66-0 Pentane**

Oral	LD50	5000 mg/kg (mouse)
Dermal	LD50	3000 mg/kg (rabbit)
Inhalative	LC50/4 h	364 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:

· **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**· **Aquatic toxicity:****109-66-0 Pentane**

EC50 | 9.74 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.· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

(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*** 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**
- **UN proper shipping name**
- **DOT**
- **ADR**
- **IMDG, IATA**
- **Transport hazard class(es)**

UN1956

Compressed gas, n.o.s.

UN1956 Compressed gas, n.o.s.

COMPRESSED GAS, N.O.S.

- **DOT**



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

2.2

2.2

- **ADR**



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

2.2 1A

2.2

- **IMDG, IATA**



- **Class**
- **Label**
- **Packing group**
- **DOT, ADR, IMDG, IATA**
- **Environmental hazards:**
- **Special precautions for user**
- **Danger code (Kemler):**

2.2

2.2

Non-Regulated Material

Not applicable.

Not applicable.

20

(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

- **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):
None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):
None of the ingredients are listed.

· 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)
None of the ingredients are listed.

· 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.

(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**GHS label elements**

The product 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.

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	78.35 - 87.9975%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	12 - 20.9%
CAS: 109-66-0 RTECS: RZ 9450000	Pentane ⚠ Flam. Liq. 2, H225; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ STOT SE 3, H336	0.0025 - 0.75%
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 not express or implied warranties, guarantees or representations regarding the product of 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 of reliance upon the information herein.

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

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

(Contd. on page 10)

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

IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial 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
Oxid. Gas 1: Oxidising Gases, Hazard Category 1
Press. Gas: Gases under pressure: Compressed gas
Flam. Liq. 2: Flammable liquids, Hazard Category 2
STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
Asp. Tox. 1: Aspiration hazard, Hazard Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

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

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