



Manufactured For:

GfG Instrumentation

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Worldwide Manufacturer of Gas Detection Solutions

Page 1/11

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

Reviewed on 01/27/2017

1 Identification

· **Product Identifier**

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

· **Product Number:** G-4115

· **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 Hexane, 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

Repr. 2 H361 Suspected of damaging fertility or the unborn child.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

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

GHS07

GHS08

· **Signal word:** Warning

(Contd. on page 2)

Safety Data Sheet (SDS)

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

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Trade name: Precision Calibration Gas Mixture**Hazard-determining components of labeling:**

Hexane

Hazard statements:

H280 Contains gas under pressure; may explode if heated.

H315 Causes skin irritation.

H361 Suspected of damaging fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

Precautionary statements:

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash thoroughly after handling.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

P308+P313 IF exposed or concerned: Get medical advice/attention.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of water.

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

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

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

99 % of the mixture consists of component(s) of unknown toxicity.

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

Health = 2

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = *1

Fire = 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: 7727-37-9	Nitrogen	78.1 - 89.9998%
RTECS: QW 9700000	⚠ Press. Gas, H280; Simple Asphyxiant	
CAS: 110-54-3	Hexane	0.0005 - 1%
RTECS: MN 9275000	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 7782-44-7	Oxygen	10 - 20.9%
	⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	

(Contd. on page 3)

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

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Trade name: Precision Calibration Gas Mixture**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:

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.

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.

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.

Personal precautions, protective equipment and emergency procedures:

Treat any fumes as toxic.

Ensure adequate ventilation.

Keep away from ignition sources

Wear protective equipment. Keep unprotected persons away.

Avoid contact with skin, eyes and clothing.

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.

(Contd. on page 4)

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

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Trade name: Precision Calibration Gas Mixture**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.

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, 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.**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:

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

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.

(Contd. on page 5)

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

Reviewed on 01/27/2017

Trade name: Precision Calibration Gas Mixture**· Exposure controls:****· Personal protective equipment:****· General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

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

· 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:

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

· Odor:

Odorless

· Odor threshold:

Not determined.

· pH-value:

Not determined.

(Contd. on page 6)

Safety Data Sheet (SDS)

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

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Reviewed on 01/27/2017

Trade name: Precision Calibration Gas Mixture

- **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.
- **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:** 0.0005 - 0.55 %
 - **VOC content:** 0.0005 - 0.55 %
- **Other information:** No further relevant information available.

- **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).

- **Information on toxicological effects:**
 - **Acute toxicity:**
 - **LD/LC50 values that are relevant for classification:**
- 110-54-3 Hexane**
- Oral LD50 25000 mg/kg (Rat)

(Contd. on page 7)

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

Reviewed on 01/27/2017

Trade name: Precision Calibration Gas Mixture

Inhalative LC50/4 h 2.5 mg/l (Pimephales) (96 hr)
 48000 mg/l (Rat)
 1 hour

- **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.

- **Toxicity:**

- **Aquatic toxicity:**

110-54-3 Hexane

EC50 12840 mg/l (Green algae)

3878 mg/l (Water flea) (48 hr)

- **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.

- **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.

(Contd. on page 8)

Safety Data Sheet (SDS)

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

Issue date 01/27/2017

Reviewed on 01/27/2017

Trade name: Precision Calibration Gas Mixture

- **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/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.
- **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

(Contd. on page 9)

Safety Data Sheet (SDS)

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Trade name: Precision Calibration Gas Mixture

- **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):**
None of the ingredients are listed.
- **Section 313 (Specific toxic chemical listings):**
110-54-3 Hexane
- **TSCA (Toxic Substances Control Act):**
All ingredients are listed or exempt from listing.
- **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):**
110-54-3 Hexane
- **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.
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS04 GHS07 GHS08

II

(Contd. on page 10)

Safety Data Sheet (SDS)

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

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Trade name: Precision Calibration Gas Mixture

- **Signal word:** Warning
- **Hazard-determining components of labeling:**
Hexane
- **Hazard statements:**
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H361 Suspected of damaging fertility or the unborn child.
May displace oxygen and cause rapid suffocation.
- **Precautionary statements:**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P308+P313 IF exposed or concerned: Get medical advice/attention.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P302+P352 IF ON SKIN: Wash with plenty of water.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P410+P403 Protect from sunlight. Store in a well-ventilated place.
P501 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.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

- **Relevant phrases:**

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- **Date of preparation / last revision:** 01/27/2017 / -

- **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)
 VOC: Volatile Organic Compounds (USA, EU)
 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

(Contd. on page 11)

Safety Data Sheet (SDS)

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

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Reviewed on 01/27/2017

Trade name: Precision Calibration Gas Mixture

REL: Recommended Exposure Limit

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

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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

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