Safety Data Sheet (SDS)

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

Issue date 06/23/2020 Reviewed on 06/23/2020

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1 Identification

· **Product Identifier**

· **Trade Name: Precision Calibration Gas Mixture**
· **Product Number:** G-16615
· **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 Isobutylene, 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: 1-833-723-3267 (Chemtrec, 24 hours)
Outside the US: 1-703-527-3887 (Chemtrec, 24 hours)

2 Hazard(s) Identification

· **Classification of the substance or mixture:**

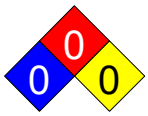

Gas cylinder

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

Simple Asphyxiant May displace oxygen and cause rapid suffocation.

· **Label elements:**
· **Hazard pictograms:**

· **Signal word:** Warning
· **Hazard statements:**
H280 Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
· **Precautionary statements:**
P410+P403 Protect from sunlight. Store in a well-ventilated place.
· **Unknown acute toxicity:**
99.2 % of the mixture consists of component(s) of unknown toxicity.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

Health = 0
Fire = 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: 115-11-7 RTECS: UD 0890000	Isobutylene Flam. Gas 1, H220; Press. Gas, H280	0.001-0.02%
CAS: 109-66-0 RTECS: RZ 9450000	Pentane Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; STOT SE 3, H336	0.35-0.75%
CAS: 7782-44-7	Oxygen Oxid. Gas 1, H270; Press. Gas, H280	19-21%
CAS: 7727-37-9 RTECS: QW 9700000	Nitrogen Press. Gas, H280; Simple Asphyxiant	78.21-80.649%

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 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.
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.

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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.

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· ***Special hazards arising from the substance or mixture:***
Closed containers may explode when exposed to extreme heat.
If incinerated, product will releaset 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.
· ***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 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:*** No special precautions are necessary if used correctly.
· ***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, powdered metals, organic materials and Phosphorus.
· ***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.

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· **Components with occupational exposure limits:**	
7727-37-9 Nitrogen	
TLV	withdrawn TLV, see App. F; simple asphyxiant
115-11-7 Isobutylene	
TLV	Long-term value: 574 mg/m³, 250 ppm
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:***
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and feed.
Avoid contact with the eyes and skin.
· ***Breathing equipment:*** Not required.
· ***Protection of hands:*** Not required.
· ***Material of gloves:*** Not required.
· ***Penetration time of glove material:*** Not applicable.
· ***Eye protection:*** Not required.
· ***Body protection:*** Not required.

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:*** None

· ***Flammability (solid, gaseous):*** Not determined.

· ***Ignition temperature:*** Not applicable

· ***Decomposition temperature:*** Not determined.

· ***Auto igniting:*** Product is not self-igniting.

· ***Danger of explosion:*** Not determined.

· ***Explosion limits:***
Lower: Not determined.

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Trade Name: Precision Calibration Gas Mixture

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, powdered metals, organic materials and Phosphorus.
· ***Hazardous decomposition products:*** Carbon Oxides and Nitrogen Oxides.

11 Toxicological Information

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

· ***LD/LC50 values that are relevant for classification:***		
115-11-7 Isobutylene		
Inhalative	LC50/4 h	620 mg/l (Rat)
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:***

· ***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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· **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:**	
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:**
Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.
· **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:**
Observe all federal, state and local environmental regulations when disposing of this material.
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 easte 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, IATA** Compressed gas, n.o.s.
· **ADR/ADN** UN1956 Compressed gas, n.o.s.
· **IMDG** COMPRESSED GAS, N.O.S.

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Trade Name: Precision Calibration Gas Mixture

· **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.
· **Hazard identification number (Kemler code):**	20
· **EMS Number:**	F-C,S-V
· **Stowage Category**	A
· **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":**	UN 1956 COMPRESSED GAS, N.O.S., 2.2

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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):**
None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

7727-37-9	Nitrogen
7782-44-7	Oxygen
109-66-0	Pentane
115-11-7	Isobutylene

· **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):**

115-11-7	Isobutylene	A4

· **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:**

· **Signal word:** Warning
· **Hazard statements:**
H280 Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
· **Precautionary statements:**
P410+P403 Protect from sunlight. Store in a well-ventilated place.

· **National regulations:**
None of the ingredients are listed.

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· ***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:*** 06/23/2020 / -

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