

Safety Data Sheet (SDS)

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

Issue date 06/15/2020

Reviewed on 06/15/2020

* 1 Identification

· **Product Identifier**

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

· **Product Number:** G-2915

· **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 Ethylene Oxide and Nitrogen.

· **Application of the substance / the mixture:** Pressurized gas, requires appropriate regulator to dispense.

· **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.



Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

Simple Asphyxiant May displace oxygen and cause rapid suffocation.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Danger

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

Ethylene oxide

· **Hazard statements:**

H280 Contains gas under pressure; may explode if heated.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

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May displace oxygen and cause rapid suffocation.

· **Precautionary statements:**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- 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:**

99.9 % of the mixture consists of component(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	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: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	99.9 - 99.9997%
CAS: 75-21-8 RTECS: KX 2450000	Ethylene oxide ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ Acute Tox. 3, H301; Acute Tox. 3, H331; ⚠ Muta. 1B, H340; Carc. 1B, H350; Repr. 1A, H360; STOT RE 1, H372; ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ STOT SE 3, H335-H336; Aquatic Acute 3, H402	0.0003 - 0.1%

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 the side position for transportation.

· **After skin contact:**

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.

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- **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 water spray to cool fire-exposed containers.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.
- **Special hazards arising from the substance or mixture:**
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.
- **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.
- **Environmental precautions:** Inform authorities in case of gas release.
- **Methods and material for containment and cleaning up:**
Dispose of 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.
Open and handle receptacle with care.
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 spray on a naked flame or any incandescent material.
Keep protective respiratory device available.
- **Conditions for safe storage, including any incompatibilities**
Store away from strong oxidizing agents, reactive metals, alkali metals, metal salts, alcohols and ammonia.

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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-in, 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:**

- **Components with occupational exposure limits:**

7727-37-9 Nitrogen

TLV | withdrawn TLV, see App. F; simple asphyxiant

75-21-8 Ethylene oxide

PEL | Short-term value: 5 ppm
Long-term value: 1 ppm
see 29 CFR 1910.1047(c)

REL | Long-term value: 0.18 mg/m³, <0.1 ppm
Ceiling limit value: 9* mg/m³, 5* ppm
See Pocket Guide App. A; *10-min/day

TLV | Long-term value: 1.8 mg/m³, 1 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.

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

Wash hands before breaks and at the end of work.

Store protective clothing separately.

- **Breathing equipment:**



Suitable respiratory protective device recommended.

- **Protection of hands:**



Protective gloves

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.

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· **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:** Mild
· **Odor threshold:** Not determined.

· **pH-value:** Not available

· **Change in condition**

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

· **Flash point:** None

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

· **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.

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- Kinematic:** Not determined.
- **Solvent content:**
- Organic solvents:** 0.0 %
- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** Stable under normal conditions.
- **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, reactive metals, alkali metals, metal salts, alcohols and ammonia.
- **Hazardous decomposition products:** Oxides of Carbon and Nitrogen (NOx).

11 Toxicological Information

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

· **LD/LC50 values that are relevant for classification:****75-21-8 Ethylene oxide**

Oral	LD50	72 mg/kg (Rat)
Inhalative	LC50/4 h	2671 mg/l (Rat)
	LC50/96 hours	84 mg/l (Cyprinodon variegatus (minnow))

- **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
The product can cause inheritable damage.
- **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

75-21-8	Ethylene oxide	1
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· **NTP (National Toxicology Program):**

75-21-8	Ethylene oxide	K
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· **OSHA-Ca (Occupational Safety & Health Administration):**

75-21-8	Ethylene oxide
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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.

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- **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 product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **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 supplier for recycling.
NOTE: Check with the local waste authority before placing any gas cylinder into a waste container for pickup.
GASCO encourages the consumer to return all cylinders.
- **Waste disposal key:** The U.S. EPA has not published waste 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** 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

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· **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
 · **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":** 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):**

75-21-8	Ethylene oxide
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· **Section 313 (Specific toxic chemical listings):**

75-21-8	Ethylene oxide
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· **TSCA (Toxic Substances Control Act):**

7727-37-9	Nitrogen
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75-21-8	Ethylene oxide
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· **California Proposition 65:**

· **Chemicals known to cause cancer:**

75-21-8	Ethylene oxide
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· **Chemicals known to cause reproductive toxicity for females:**

75-21-8	Ethylene oxide
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· Chemicals known to cause reproductive toxicity for males:		
75-21-8	Ethylene oxide	
· Chemicals known to cause developmental toxicity:		
75-21-8	Ethylene oxide	
· Carcinogenic categories:		
· EPA (Environmental Protection Agency):		
None of the ingredients are listed.		
· TLV (Threshold Limit Value established by ACGIH):		
75-21-8	Ethylene oxide	A2
· NIOSH-Ca (National Institute for Occupational Safety and Health):		
75-21-8	Ethylene oxide	

· **GHS label elements**

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

· **Hazard pictograms:**



· **Signal word:** Danger

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

Ethylene oxide

· **Hazard statements:**

H280 Contains gas under pressure; may explode if heated.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

· **Precautionary statements:**

P201 Obtain special instructions before use.

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

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

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

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:**

None of the ingredients are listed.

· **Information about limitation of use:**

· **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:** 06/15/2020 / -

· **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
 Press. Gas: Gases under pressure – Compressed gas
 Press. Gas: Gases under pressure – Dissolved gas
 Acute Tox. 3: Acute toxicity – Category 3
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Muta. 1B: Germ cell mutagenicity – Category 1B
 Carc. 1B: Carcinogenicity – Category 1B
 Repr. 1A: Reproductive toxicity – Category 1A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3

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

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