



Safety Data Sheet (SDS)

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

Issue date 12/09/2019

Reviewed on 12/09/2019

* 1 Identification

- **Product Identifier**
- **Trade Name: Precision Calibration Gas Mixture**
- **Product Number:** G-14615A
- **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 Carbon Monoxide, Oxygen and Nitrogen.
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Air Systems International
829 Juniper Crescent
Chesapeake, VA 23320
Toll Free: 800-866-8100
Local: 757-424-3967
Fax: 800-247-5850
sales@airsystems.com
www.airsystems.com
- Canadian Agent:
Pacesetter Sales
2026 38 Ave. SW
Calgary, AB T2T 2KA
403-618-3002
- **Emergency telephone number:**
Inside the US: 1-800-255-3924 (Chemtel, 24 hours)
Outside of the US: 1-813-248-0585 (Chemtel, 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.

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Warning
- **Hazard-determining components of labeling:**
Nitrogen
Carbon Monoxide
Oxygen
- **Hazard statements:**
H280 Contains gas under pressure; may explode if heated.
- **Precautionary statements:**
P410+P403 Protect from sunlight. Store in a well-ventilated place.
- **Unknown acute toxicity:**
99.9 % of the mixture consists of component(s) of unknown toxicity.

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



Health = 0
 Fire = 0
 Reactivity = 0

The substance possesses oxidizing properties.

- **HMS-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: 7727-37-9 RTECS: QW 9700000	Nitrogen ⚠ Press. Gas, H280; Simple Asphyxiant	76.45-80.49995%
CAS: 7782-44-7	Oxygen ⚠ Oxid. Gas 1, H270; ⚠ Press. Gas, H280	19.5-23.4%
CAS: 630-08-0 RTECS: FG 3500000	Carbon Monoxide ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; ⚠ Acute Tox. 3, H331; ⚠ Repr. 1A, H360; STOT RE 1, H372	0.00005 - 0.15%

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:** Generally, the product does not irritate the skin.
- **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.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.
- **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).

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- **Advice for firefighters**
- **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:**
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.
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 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.
- **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.
Keep protective respiratory device available.
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, Alkali metals, metal oxides 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.

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- **Control parameters:**
- **Components with occupational exposure limits:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituents have no known exposure limits.

7727-37-9 Nitrogen	
TLV	withdrawn TLV, see App. F; simple asphyxiant
630-08-0 Carbon Monoxide	
PEL	Long-term value: 55 mg/m ³ , 50 ppm
REL	Long-term value: 40 mg/m ³ , 35 ppm Ceiling limit value: 229 mg/m ³ , 200 ppm
TLV	Long-term value: 29 mg/m ³ , 25 ppm BEI

- **Ingredients with biological limit values:**

630-08-0 Carbon Monoxide	
BEI	3.5 % of hemoglobin blood end of shift Carboxyhemoglobin (background, nonspecific)
	20 ppm end-exhaled air end of shift Carbon monoxide (background, nonspecific)

- **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:** Not required.
- **Protection of hands:** Not required.
- **Penetration time of glove material:** Not applicable.

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.
- **Change in condition**
 - **Melting point/Melting range:** Not determined.
 - **Boiling point/Boiling range:** Not determined.

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Trade Name: Precision Calibration Gas Mixture

- **Flash point:** None
- **Flammability (solid, gaseous):** Contact with combustible material may cause fire.
- **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:** 0.0 %
- **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, phosphorous, organic materials, Alkali metals, metal oxides and powdered metals.
- **Hazardous decomposition products:** Carbon Oxides and Nitrogen Oxides (NOx).

11 Toxicological Information

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

· **LD/LC50 values that are relevant for classification:**

630-08-0 Carbon Monoxide

Inhalative	LC50/4 h	7520 mg/l (Rat)
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- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** No irritating effect.

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· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

· **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:** 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:**

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:**

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.

Air Systems International 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

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- **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

· **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

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Trade Name: Precision Calibration Gas Mixture· **UN "Model Regulation":** UN 1956 COMPRESSED GAS, N.O.S., 2.2, (E)**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

630-08-0 Carbon Monoxide

· **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:**

630-08-0 Carbon Monoxide

· **New Jersey Right-to-Know List:**

All ingredients are listed.

· **New Jersey Special Hazardous Substance List:**

630-08-0 Carbon Monoxide

TE, F4

· **Pennsylvania Right-to-Know List:**

All ingredients are listed.

· **Pennsylvania Special Hazardous Substance List:**

630-08-0 Carbon Monoxide

E

· **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.

· **GHS label elements**

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

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Trade Name: Precision Calibration Gas Mixture**Hazard pictograms:**· **Signal word:** Warning**Hazard-determining components of labeling:**

Nitrogen

Carbon Monoxide

Oxygen

Hazard statements:

H280 Contains gas under pressure; may explode if heated.

Precautionary statements:

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

National regulations:

None of the ingredients are listed.

· **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:** 12/09/2019 / -**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

BEI: Biological 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

Acute Tox. 3: Acute toxicity – Category 3

Repr. 1A: Reproductive toxicity – Category 1A

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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

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