

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### \* 1 Identification

· **Product Identifier**

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

· **Product Number:** G-23828A

· **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, Carbon Dioxide, Methane 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.



Skull and crossbones

Acute Tox. 3      H331 Toxic if inhaled.



Health hazard

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

STOT RE 1      H372 Causes damage to organs through prolonged or repeated exposure.

Simple Asphyxiant      May displace oxygen and cause rapid suffocation.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Danger

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

Carbon Monoxide

(Contd. on page 2)

# Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

## Trade Name: Precision Calibration Gas Mixture

### Hazard statements:

- H280 Contains gas under pressure; may explode if heated.
- H331 Toxic if inhaled.
- H360 May damage fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- 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.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P311 Call a poison center/doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P314 Get medical advice/attention if you feel unwell.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- 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:

This value refers to knowledge of known, established toxicological or ecotoxicological values.  
99.8 % of the mixture consists of component(s) of unknown toxicity.

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

### NFPA ratings (scale 0 - 4)



### HMIS-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	Nitrogen	88-98.8299%
RTECS: QW 9700000	⚠ Press. Gas, H280; Simple Asphyxiant	
CAS: 124-38-9	Carbon Dioxide	1-10%
RTECS: FF 6400000	⚠ Press. Gas, H280; Simple Asphyxiant	

(Contd. on page 3)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### Trade Name: Precision Calibration Gas Mixture

CAS: 74-82-8 RTECS: PA 1490000	Methane ⚠ Flam. Gas 1, H220; ⚠ Press. Gas, H280; Simple Asphyxiant	0.02-1%
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	0.1501-1%

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

#### 4 First-Aid Measures

· **Description of first aid measures**

· **After inhalation:**

Get medical attention immediately. Move person to fresh air. If it is expected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

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.

#### 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.

· **Special hazards arising from the substance or mixture:**

Closed containers may explode when exposed to extreme heat.

If incinerated, product will releset 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.

(Contd. on page 4)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### Trade Name: Precision Calibration Gas Mixture

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.

Ensure adequate ventilation.

Dispose of contaminated material as waste according to section 13.

- **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.

- **Protective Action Criteria for Chemicals**

· <b>PAC-1:</b>		
7727-37-9	Nitrogen	7.96E+05 ppm
74-82-8	Methane	65000*** ppm
630-08-0	Carbon Monoxide	75 ppm
· <b>PAC-2:</b>		
7727-37-9	Nitrogen	8.32E+05 ppm
74-82-8	Methane	230000*** ppm
630-08-0	Carbon Monoxide	83 ppm
· <b>PAC-3:</b>		
7727-37-9	Nitrogen	8.69E+05 ppm
74-82-8	Methane	400000*** ppm
630-08-0	Carbon Monoxide	330 ppm

## 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.

- **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.

(Contd. on page 5)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### Trade Name: Precision Calibration Gas Mixture

- **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

#### 124-38-9 Carbon Dioxide

PEL	Long-term value: 9000 mg/m <sup>3</sup> , 5000 ppm
REL	Short-term value: 54,000 mg/m <sup>3</sup> , 30,000 ppm Long-term value: 9000 mg/m <sup>3</sup> , 5000 ppm
TLV	Short-term value: 54,000 mg/m <sup>3</sup> , 30,000 ppm Long-term value: 9000 mg/m <sup>3</sup> , 5000 ppm

#### 74-82-8 Methane

TLV | refer to App. F in TLVs and BEIs book; NIC-D, EX

#### 630-08-0 Carbon Monoxide

PEL	Long-term value: 55 mg/m <sup>3</sup> , 50 ppm
REL	Long-term value: 40 mg/m <sup>3</sup> , 35 ppm Ceiling limit value: 229 mg/m <sup>3</sup> , 200 ppm
TLV	Long-term value: 29 mg/m <sup>3</sup> , 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:** Wash hands before breaks and at the end of work.

- **Breathing equipment:**



Suitable respiratory protective device recommended.

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### Trade Name: Precision Calibration Gas Mixture

- **Protection of hands:** Not required.
- **Material of gloves:** Not applicable.
- **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.

**Upper:** Not determined.

· **Vapor pressure @ 20 °C (68 °F):** ≤57,300 hPa (≤4300 mm Hg)

#### · 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:

**VOC content:** 0.00 %

**Solids content:** 0.0 %

· **Other information:** No further relevant information available.

(Contd. on page 7)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

**Trade Name: Precision Calibration Gas Mixture**

### 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:**

#### 74-82-8 Methane

Inhalative	LC50/4 h	217 mg/l (Mouse)
------------	----------	------------------

#### 630-08-0 Carbon Monoxide

Inhalative	LC50/4 h	7,520 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):**

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:** The hazards for the aquatic environment are unknown.
- **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:** Generally not hazardous for water.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

(Contd. on page 8)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

**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 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
- **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

(Contd. on page 9)



**Safety Data Sheet (SDS)**

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

Issue date 07/18/2020

Reviewed on 07/18/2020

**Trade Name: Precision Calibration Gas Mixture**

· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations:</b>	On passenger aircraft/rail: 75 kg On cargo aircraft only: 150 kg
-----	
· <b>ADR/ADN</b>	
· <b>Excepted quantities (EQ):</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
-----	
· <b>IMDG</b>	
· <b>Limited quantities (LQ):</b>	120 ml
· <b>Excepted quantities (EQ):</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1956 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):**

· <b>Section 355 (extremely hazardous substances):</b>
--

None of the ingredients are listed.
-------------------------------------

· <b>Section 313 (Specific toxic chemical listings):</b>
--

None of the ingredients are listed.
-------------------------------------

· <b>TSCA (Toxic Substances Control Act):</b>
---

7727-37-9	Nitrogen
-----------	----------

124-38-9	Carbon Dioxide
----------	----------------

74-82-8	Methane
---------	---------

630-08-0	Carbon Monoxide
----------	-----------------

· <b>California Proposition 65:</b>
-------------------------------------

· <b>Chemicals known to cause cancer:</b>
---

None of the ingredients are listed.
-------------------------------------

· <b>Chemicals known to cause reproductive toxicity for females:</b>
--

None of the ingredients are listed.
-------------------------------------

· <b>Chemicals known to cause reproductive toxicity for males:</b>
--

None of the ingredients are listed.
-------------------------------------

· <b>Chemicals known to cause developmental toxicity:</b>
---

630-08-0	Carbon Monoxide
----------	-----------------

· <b>New Jersey Right-to-Know List:</b>
---

All ingredients are listed.
-----------------------------

· <b>New Jersey Special Hazardous Substance List:</b>
---

74-82-8	Methane	F4
---------	---------	----

630-08-0	Carbon Monoxide	TE, F4
----------	-----------------	--------

(Contd. on page 10)


## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

### Trade Name: Precision Calibration Gas Mixture

· <b>Pennsylvania Right-to-Know List:</b>	
All ingredients are listed.	
· <b>Pennsylvania Special Hazardous Substance List:</b>	
630-08-0	Carbon Monoxide <span style="float: right;">E</span>
· <b>Carcinogenic categories:</b>	
· <b>EPA (Environmental Protection Agency):</b>	
None of the ingredients are listed.	
· <b>TLV (Threshold Limit Value established by ACGIH):</b>	
None of the ingredients are listed.	
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health):</b>	
None of the ingredients are listed.	
· <b>GHS label elements</b>	
The product is classified and labeled according to the Globally Harmonized System (GHS).	
· <b>Hazard pictograms:</b>	
	
· <b>Signal word:</b> Danger	
· <b>Hazard-determining components of labeling:</b>	
Carbon Monoxide	
· <b>Hazard statements:</b>	
H280 Contains gas under pressure; may explode if heated.	
H331 Toxic if inhaled.	
H360 May damage fertility or the unborn child.	
H372 Causes damage to organs through prolonged or repeated exposure.	
May displace oxygen and cause rapid suffocation.	
· <b>Precautionary statements:</b>	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311	Call a poison center/doctor.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P314	Get medical advice/attention if you feel unwell.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
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.
· <b>National regulations:</b>	
None of the ingredients are listed.	

(Contd. on page 11)

## Safety Data Sheet (SDS)

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

Issue date 07/18/2020

Reviewed on 07/18/2020

**Trade Name: Precision Calibration Gas Mixture**

- **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 last revision/ revision number:** 07/18/2020 / -

- **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)  
 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  
 REL: Recommended Exposure Limit  
 BEI: Biological 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  
 Repr. 1A: Reproductive toxicity – Category 1A  
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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

SDS created by MSDS Authoring Services    [www.msdsauthoring.com](http://www.msdsauthoring.com)    +1-877-204-9106