

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Carbon Monoxide (75.20% - 99.9999%) in Propane  
Product code : SG-2002-02377

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Test gas/Calibration gas.

#### 1.3. Details of the supplier of the safety data sheet

Air Liquide America Specialty Gases  
6141 Easton Rd  
Plumsteadville, PA 18949 - USA  
T 1.800.217.2688  
[www.airliquide.com](http://www.airliquide.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

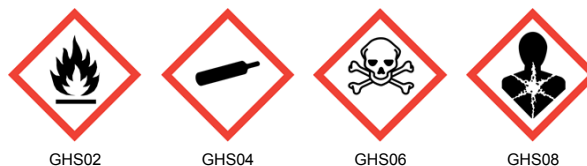
Flam. Gas 1	H220
Compressed gas	H280
Acute Tox. 3 (Inhalation:gas)	H331
Repr. 1A	H360
STOT RE 1	H372

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :

- H220 - Extremely flammable gas
- H280 - Contains gas under pressure; may explode if heated
- H331 - Toxic if inhaled
- H360 - May damage fertility or the unborn child (Inhalation)
- H372 - Causes damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation)
- CGA-HG04 - May form explosive mixtures with air
- CGA-HG10 - Asphyxiating even with adequate oxygen

Precautionary statements (GHS-US) :

- P202 - Do not handle until all safety precautions have been read and understood
- P210 - Keep away from heat, open flames, sparks. - No smoking
- P260 - Do not breathe gas
- P271 - Use only outdoors or in a well-ventilated area
- P280 - Wear protective gloves, protective clothing, eye protection, face protection
- P284 - Wear respiratory protection. Consult respiratory device supplier's product information for the selection of the appropriate device.
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
- P308+P311 - If exposed or concerned: Call a POISON CENTER
- P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
- P381 - Eliminate all ignition sources if safe to do so
- P403 - Store in a well-ventilated place
- P405 - Store locked up
- P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)  
CGA-PG05 - Use a back flow preventive device in the piping  
CGA-PG06 - Close valve after each use and when empty  
CGA-PG10 - Use only with equipment rated for cylinder pressure  
CGA-PG14 - Approach suspected leak area with caution  
CGA-PG18 - When returning cylinder, install leak tight valve outlet cap or plug  
CGA-PG21 - Open valve slowly

### 2.3. Other hazards

Other hazards not contributing to the classification : This product contains a chemical asphyxiant.

### 2.4. Unknown acute toxicity (GHS-US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Carbon monoxide	(CAS No) 630-08-0	75.2 - 99.9999	Flam. Gas 1, H220 Compressed gas, H280 Acute Tox. 3 (Inhalation:gas), H331 Repr. 1A, H360 STOT RE 1, H372
Propane	(CAS No) 74-98-6	0.0001 - 24.8	Flam. Gas 1, H220 Liquefied gas, H280

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Adverse effects not expected from this product.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Symptoms similar to those listed under inhalation.

Symptoms/injuries after inhalation : Toxic if inhaled. Headache. Asphyxiating even with adequate oxygen. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : May damage fertility. May damage the unborn child. Causes damage to organs (CNS) through prolonged or repeated exposure (Inhalation).

### 4.3. Indication of any immediate medical attention and special treatment needed

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen. Obtain medical attention if breathing difficulty persists.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : Do not use water jet to extinguish.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : This product is flammable.

Explosion hazard : May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity : None known.

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 5.3. Advice for firefighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate ventilation.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Wear protective equipment consistent with the site emergency plan.
- Emergency procedures : Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

#### 6.1.2. For emergency responders

- Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
- Emergency procedures : Evacuate and limit access. Ventilate area. Remove ignition sources. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering atmospheres of unknown contaminant concentration until proven to be safe.

### 6.2. Environmental precautions

Try to stop release if safe to do so. Try to stop release.

### 6.3. Methods and material for containment and cleaning up

- For containment : Try to stop release if safe to do so.
- Methods for cleaning up : Dispose of this material and its container in accordance with local regulations.

### 6.4. Reference to other sections

See also Sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Handle empty containers with care because residual vapors are flammable. Use equipment rated for cylinder pressure. In use, may form flammable vapor-air mixture. Close valve after each use and when empty.
- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
- Hygiene measures : Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store locked up.
- Incompatible products : None known.
- Incompatible materials : Oxidizing materials. Air.

### 7.3. Specific end use(s)

Test gas/Calibration gas.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Carbon Monoxide (75.20% - 99.9999%) in Propane

ACGIH	Not applicable
OSHA	Not applicable

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Carbon monoxide (630-08-0)		
ACGIH	ACGIH TWA (ppm)	25 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	55 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
Propane (74-98-6)		
ACGIH	ACGIH TWA (ppm)	1000 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

### 8.2. Exposure controls

Appropriate engineering controls	: Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Alarm detectors should be used when toxic gases may be released. Consider work permit system e.g. for maintenance activities.
Hand protection	: Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.
Eye protection	: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.
Respiratory protection	: Wear respiratory protection. Consult respirator supplier's product information for the selection of the appropriate respiratory protection. Consult respiratory device supplier's product information for the selection of the appropriate device.
Thermal hazard protection	: None necessary during normal and routine operations.
Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
Other information	: Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Clear, colorless gas.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammability range not available.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Relative gas density	: Heavier than or similar to air
Solubility	: Water: Solubility in water of component(s) of the mixture : • : Insoluble • : 75 mg/l
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Without adequate ventilation formation of explosive mixtures may be possible.

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Oxidizing properties : None.  
Explosive limits : No data available

### 9.2. Other information

Additional information : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

None known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Can form explosive mixture with air.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Air. Oxidizing materials.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Inhalation:gas: Toxic if inhaled.

Carbon Monoxide (75.20% - 99.9999%) in Propane	
ATE US (gases)	1880.002 ppmV/4h
Carbon monoxide (630-08-0)	
LC50 inhalation rat (ppm)	1880 ppm/4h
ATE US (gases)	1880.000 ppmV/4h
Propane (74-98-6)	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	410000 ppm/4h
ATE US (gases)	410000.000 ppmV/4h
ATE US (vapors)	658.000 mg/l/4h
ATE US (dust, mist)	658.000 mg/l/4h

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

Reproductive toxicity : May damage fertility or the unborn child (Inhalation).  
Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Causes damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation).

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Toxic if inhaled. Headache. Asphyxiating even with adequate oxygen. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries upon intravenous administration	: Not known.
Chronic symptoms	: May damage fertility. May damage the unborn child. Causes damage to organs (CNS) through prolonged or repeated exposure (Inhalation).

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

Carbon monoxide (630-08-0)	
Persistence and degradability	Will not undergo hydrolysis. Not readily biodegradable. Not applicable for inorganic gases.
Propane (74-98-6)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

#### 12.3. Bioaccumulative potential

Carbon monoxide (630-08-0)	
Log Pow	1.78
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
Propane (74-98-6)	
Log Pow	2.36
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

#### 12.4. Mobility in soil

Carbon monoxide (630-08-0)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Propane (74-98-6)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

#### 12.5. Other adverse effects

Effect on ozone layer	:
Effect on the global warming	: Contains greenhouse gas(es) not covered by 842/2006/EC.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods	: Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air.
Waste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at <a href="http://www.cganet.com">www.cganet.com</a> for more guidance on suitable disposal methods.
Additional information	: None.


### SECTION 14: Transport information

In accordance with DOT	
Transport document description	: UN1953 Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D, 2.3
UN-No.(DOT)	: UN1953
Proper Shipping Name (DOT)	: Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D
Department of Transportation (DOT) Hazard Classes	: 2.3 - Class 2.3 - Poisonous gas 49 CFR 173.115

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard labels (DOT)	: 2.3 - Poison gas 2.1 - Flammable gas
	
DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: 4 - This material is poisonous by inhalation (see 171.8 of this subchapter) in Hazard Zone D (see 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: None
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 192
DOT Packaging Bulk (49 CFR 173.xxx)	: 245
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: Forbidden
DOT Vessel Stowage Location	: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"


### Additional information

Other information	: No supplementary information available.
-------------------	---

### ADR

Transport document description	: UN 1953, 2.3 (2.1), (B/D)
Class (ADR)	: 2 - Gases
Hazard identification number (Kemler No.)	: 263
Classification code (ADR)	: 1TF
Danger labels (ADR)	: 2.3 - Toxic gases 2.1 - Flammable gases



Orange plates	: 
---------------	---

Tunnel restriction code (ADR)	: B/D
LQ	: 0
Excepted quantities (ADR)	: E0

### Transport by sea

UN-No. (IMDG)	: 1953
Proper Shipping Name (IMDG)	: COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.
Class (IMDG)	: 2.3 - Toxic gases

### Air transport

UN-No.(IATA)	: 1953
Proper Shipping Name (IATA)	: COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.
Class (IATA)	: 2

# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Carbon monoxide (630-08-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Propane (74-98-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### Carbon monoxide (630-08-0)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas  
Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects  
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

##### Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas

#### EU-Regulations

##### Carbon monoxide (630-08-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Propane (74-98-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

#### 15.2.2. National regulations

##### Carbon monoxide (630-08-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the Canadian IDL (Ingredient Disclosure List)

##### Propane (74-98-6)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

#### 15.3. US State regulations

##### Carbon monoxide (630-08-0)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	Yes	No	No	



# Carbon Monoxide (75.20% - 99.9999%) in Propane

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Carbon monoxide (630-08-0)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

### Propane (74-98-6)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases:

Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
Liquefied gas	Gases under pressure Liquefied gas
Repr. 1A	Reproductive toxicity Category 1A
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H220	Extremely flammable gas
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

SDS US (GHS HazCom 2012)

*This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.*