



## Safety Data Sheet

4000ppm Propane, 4.5% VOL Carbon Monoxide, 12% VOL Carbon Dioxide; balance Air

**Ideal Calibrations, LLC**  
2750 Oakwood Blvd.  
Melvindale, MI 48122  
(734) 956-0539  
<http://www.idealcalibrations.com/>

### Section 1: Product and Company Identification

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Melvindale, MI 48122  
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Product Code: 4000ppm Propane, 4.5% VOL Carbon Monoxide, 12% VOL Carbon Dioxide; balance Air  
Part Number: 0760

**Synonyms:**

**Recommended Use:** Calibration of gas detection devices

**Usage Restrictions:** Do not use if current date is past expiration date on cylinder

### Section 2: Hazards Identification



**Danger**

**Hazard Classification:**

Gases Under Pressure  
Reproductive Toxicity (Category 1.A)  
Specific target organ toxicity (Repeated Exposure) (Category 1)

**Hazard Statements:**

Causes damage to organs through prolonged or repeated exposure  
Contains gas under pressure; may explode if heated  
May damage fertility or the unborn child

**Precautionary Statements**

**Prevention:**

Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/ vapors/spray..  
Wear protective gloves, protective clothing, eye protection and face protection.  
Obtain special instructions before use.

**Response:**

Call a poison center or doctor if you feel unwell.  
If exposed or concerned: Get medical advice/attention.

**Storage:**

Protect from sunlight.  
Store in well-ventilated place.  
Store locked up.

**Disposal:**

Dispose of contents and/or container in accordance with applicable regulations.

## Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Propane	74-98-6	0.4
Carbon Monoxide	630-08-0	4.5
Carbon Dioxide	124-38-9	12
Air	Not applicable	83.1

	Chemical Substance	Chemical Family	Trade Names
Propane	PROPANE	Hydrocarbons, Aliphatic, Saturated	N-PROPANE; DIMETHYLMETHANE; PROPYL HYDRIDE; R-290; PROPYLHYDRIDE; LIQUEFIED PETROLEUM GAS; LPG; >96% NATURAL GRADE; >99.9% PURE GRADE; UN 1978; C3H8
Carbon Monoxide	CARBON MONOXIDE	Inorganic gases	CARBON OXIDE; CARBON OXIDE (CO); UN 1016; CO
Carbon Dioxide	CARBON DIOXIDE, GAS	Inorganic gases	CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; UN 1013; CO2
Air	AIR, COMPRESSED	Inorganic gases	AIR; UN 1002 Nitrogen CAS: 7727-37-9 Oxygen CAS: 7782-44-7

## Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Propane	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Carbon Monoxide	Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.	Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Carbon Dioxide	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Do not induce vomiting.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Air	Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Get medical attention.	

## Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Propane	Regular dry chemical, high expansion foam Large fires: Flood with fine water spray.	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes	<ul style="list-style-type: none"> <li>▪ Any self-contained breathing apparatus with a full facepiece.</li> <li>▪ Any self-contained breathing apparatus with a full facepiece.</li> </ul>
Carbon Monoxide	Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Carbon dioxide	<ul style="list-style-type: none"> <li>▪ Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.</li> <li>▪ Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.</li> </ul>
Carbon Dioxide	Non-flammable	Non-flammable	<ul style="list-style-type: none"> <li>▪ Any appropriate escape-type, self-contained breathing apparatus.</li> <li>▪ Non-flammable</li> </ul>
Air	Use extinguishing agents appropriate for surrounding fire.		<ul style="list-style-type: none"> <li>▪ No respirator is required under normal conditions of use.</li> </ul>

## Section 6: Accidental Release Measures

	Personal Precautions	Environmental Precautions	Methods for Containment
Propane	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition.
Carbon Monoxide	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.	Avoid heat, flames, sparks and other sources of ignition. Keep out of water supplies and sewers.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition.
Carbon Dioxide	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material.	Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.	Stop leak if possible without personal risk.
Air			Stop leak if possible without personal risk.

	Methods for Cleanup	Other Information
Propane	Contact emergency personnel	None
Carbon Monoxide	Stop leak, evacuate area. Wear protective equipment.	Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).
Carbon Dioxide	Stop leak, evacuate, remove source of ignition.	None
Air		

## Section 7: Handling and Storage

Handling	Storage

	Handling	Storage
<b>Propane</b>	Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.
<b>Carbon Monoxide</b>	Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.
<b>Carbon Dioxide</b>	Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards
<b>Air</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	

## Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
<b>Propane</b>	PROPANE: 1000 ppm (1800 mg/m3) OSHA TWA 1000 ppm (1800 mg/m3) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m3) OSHA TWA 1000 ppm ACGIH TWA 1000 ppm (1800 mg/m3) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA
<b>Carbon Monoxide</b>	CARBON MONOXIDE: 50 ppm (55 mg/m3) OSHA TWA 35 ppm (40 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 200 ppm (229 mg/m3) OSHA ceiling (vacated by 58 FR 35338, June 30, 1993) 25 ppm ACGIH TWA 35 ppm (40 mg/m3) NIOSH recommended TWA 10 hour(s) 200 ppm (229 mg/m3) NIOSH recommended ceiling
<b>Carbon Dioxide</b>	CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m3) OSHA TWA 10000 ppm (18000 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m3) NIOSH recommended STEL
<b>Air</b>	AIR, COMPRESSED: No occupational exposure limits established.

### Engineering Controls

Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
<b>Propane</b>	For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Any self-contained breathing apparatus with a full facepiece.
<b>Carbon Monoxide</b>	Eye protection not required, but recommended.	Protective clothing is not required.	Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
<b>Carbon Dioxide</b>	For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Any appropriate escape-type, self-contained breathing apparatus.
<b>Air</b>	Eye protection not required under normal conditions.	Protective clothing is not required under normal conditions.	No respirator is required under normal conditions of use.

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

	Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
<b>Propane</b>	Gas	Clear	Colorless	N/A	Gas	Gasoline odor	N/A
<b>Carbon Monoxide</b>	Gas	Colorless	Colorless	N/A	Gas	Odorless	Tasteless
<b>Carbon Dioxide</b>	Gas	Colorless	Colorless	N/A	Gas	Odorless	Acid taste
<b>Air</b>	Gas	Clear	Colorless		Gas	Not available	

	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
<b>Propane</b>	-157 F (-105 C)	Not available	Not available	842 F (450 C)	0.095	0.021
<b>Carbon Monoxide</b>	Flammable	Not available	1479.11 (log = 3.17) (estimated from water solubility)	1128-1202 F (609-650 C)	0.74	12.0-12.5%
<b>Carbon Dioxide</b>	Not flammable	Not available	N/A	Nonflammable	Nonflammable	Nonflammable
<b>Air</b>						

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
<b>Propane</b>	-40 F (-40 C)	-310 F (-190 C)	6398 mmHg @ 21.1 C	1.55 (Air=1)	0.5853 @ -45 C	Very slightly soluble	Not applicable	5000-20000 ppm	Not applicable	Not available
<b>Carbon Monoxide</b>	-312.7 F (-191.5 C)	-326 F (-199 C)	760 mmHg @ -191 C gas; cannot be liquefied at room temperature	0.968 (Air=1)	Not applicable	2.3% @ 20 C	Not applicable	Not available	Not applicable	0.01657 cP @ 0 C
<b>Carbon Dioxide</b>	Not available	-71 F (-57 C) @ 4000 mmHg	43700 mmHg @ 21 C	1.5 (Air=1)	1.522 @ 21 C	Soluble	3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid)	Not available	Not applicable	0.01657 cP @ 0 C
<b>Air</b>	-317 F (-194 C)	Not available	760 mmHg @ -194 C	1	Not applicable	Slightly soluble	Not applicable	Not available	Not applicable	0.01853 cP @ 26.85 C

	Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
<b>Propane</b>	44.11	C-H3-C-H2-C-H3	0.116	Not available	Not available	Not applicable	Soluble: Absolute alcohol, ether, chloroform, benzene, turpentine
<b>Carbon Monoxide</b>	28.01	C-O	1.250 g/L @ 0 C	Not available	100%	Not applicable	Soluble: Alcohol, benzene, acetic acid, ethyl acetate, chloroform, cuprous chloride solutions
<b>Carbon Dioxide</b>	44.01	C-O2	0.114	Not available	Not applicable	Not applicable	Soluble: Alcohol, acetone, hydrocarbons, organic solvents
<b>Air</b>			1.29 g/L @ 0 C			Not applicable	Slightly Soluble

## Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
<b>Propane</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Oxidizing materials, combustible materials, halogen compounds,
<b>Carbon Monoxide</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Oxidizing materials, halogens, metal oxides, metals, combustible materials, lithium
<b>Carbon Dioxide</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases
<b>Air</b>	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	None known

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
<b>Propane</b>	Oxides of carbon	Will not polymerize.
<b>Carbon Monoxide</b>	Oxides of carbon	Will not polymerize.
<b>Carbon Dioxide</b>	Carbon monoxide	Will not polymerize.
<b>Air</b>	No hazard expected.	Will not polymerize.

## Section 11: Toxicology Information

### Acute Effects

	Oral LD50	Dermal LD50	Inhalation
<b>Propane</b>	LC50 Inhalation Gas. Rat >800000 ppm 15 minutes	Not available	Central nervous system depression, difficulty breathing, nausea, vomiting, irregular heartbeat, headache, symptoms of drunkenness, disorientation, suffocation, convulsions, coma
<b>Carbon Monoxide</b>	LC50 Inhalation Gas. Rat 1807 ppm 4 hours	Not available	Changes in body temperature, changes in blood pressure, nausea, vomiting, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hallucinations, pain in extremities, tremors, loss of coordination, hearing loss, visual disturbances, eye damage, suffocation, blood disorders, convulsions, coma
<b>Carbon Dioxide</b>	Not established	Not established	Ringling in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma
<b>Air</b>	Not available	Not available	

	Eye Irritation	Skin Irritation	Sensitization
<b>Propane</b>	Liquid: frostbite, blurred vision	Liquid: blisters, frostbite	No health hazards classified.
<b>Carbon Monoxide</b>	No information on significant adverse effects	No information on significant adverse effects	Acute toxicity, Category 3, inhalation; H331: Toxic if inhaled. Reproductive toxicity, Category 1A; H360D: May damage the unborn child. Specific Target Organ Toxicity (repeated exposure), Category 1; H372: Causes damage to organs through prolonged or repeated exposure.
<b>Carbon Dioxide</b>	Irritation, frostbite, blurred vision	Liquid: blisters, frostbite	Difficulty breathing
<b>Air</b>	No information is available	No information is available	No significant target effects reported.

### Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
<b>Propane</b>	Not available	Not available	Not available	No data
<b>Carbon Monoxide</b>	Not available	Available.	Available.	No data
<b>Carbon Dioxide</b>	Not available	Not established	Available.	No data
<b>Air</b>	Not available	Not available	No data	No data

## Section 12: Ecological Information

### Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
<b>Propane</b>	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available
<b>Carbon Monoxide</b>	Fish toxicity: 75000 ug/L 1 day(s) LC100 (Mortality) Orangespotted sunfish ( <i>Lepomis humilis</i> ) Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Relatively non-persistent in the environment. Highly volatile from water.	Not available	Not expected to leach through the soil or the sediment.
<b>Carbon Dioxide</b>	Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout ( <i>Salmo trutta</i> ) Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Relatively non-persistent in the environment. Moderately volatile from water.	Accumulates very little in the bodies of living organisms.	Leaches through the soil
<b>Air</b>	Fish toxicity: Not available	Not available	Not available	Not available

## Section 13: Disposal Considerations

<b>Propane</b>	Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
<b>Carbon Monoxide</b>	Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
<b>Carbon Dioxide</b>	Dispose in accordance with all applicable regulations.
<b>Air</b>	Dispose in accordance with all applicable regulations.

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

<b>Shipping Name</b>	Compressed gas, n.o.s. (Air, Carbon Dioxide)
<b>UN Number</b>	UN1956
<b>Hazard Class</b>	2.2
<b>Hazard Information</b>	Non-Flammable Gas

#### Individual Component Information

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
<b>Propane</b>	Propane	UN1978	2.1	Not applicable	2.1	Forbidden	150 kg	N/A
<b>Carbon Monoxide</b>	Carbon monoxide, compressed	UN1016	2.3	Not applicable	2.3; 2.1	Forbidden	25 kg	Toxic-Inhalation Hazard Zone D
<b>Carbon Dioxide</b>	Carbon dioxide	UN1013	2.2	Not applicable	2.2	75 kg or L	150kg	None
<b>Air</b>	Air, compressed	UN1002	2.2	Not available	2.2	Not available	Not available	Not available

#### Canadian Transportation of Dangerous Goods

	Shipping Name	UN Number	Class	Packing Group / Risk Group
<b>Propane</b>	Propane	UN1978	2.1	Not applicable
<b>Carbon Monoxide</b>	Carbon monoxide, compressed	UN1016	2.3; 2.1	Not applicable
<b>Carbon Dioxide</b>	Carbon dioxide	UN1013	2.2	Not applicable
<b>Air</b>	Air, compressed	UN1002	2.2	Not available

## Section 15: Regulatory Information

### U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
<b>Propane</b>	Not regulated.	Not regulated.	Not regulated.
<b>Carbon Monoxide</b>	Not regulated.	Not regulated.	Not regulated.
<b>Carbon Dioxide</b>	Not regulated.	Not regulated.	Not regulated.
<b>Air</b>	Not regulated.	Not regulated.	Not regulated.

### SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
<b>Propane</b>	Yes	No	Yes	No	Yes
<b>Carbon Monoxide</b>	Yes	No	Yes	No	Yes
<b>Carbon Dioxide</b>	Yes	No	No	No	Yes
<b>Air</b>	No	No	No	No	Yes

## SARA 372.65

Propane	Not regulated.
Carbon Monoxide	Not regulated.
Carbon Dioxide	Not regulated.
Air	Not regulated.

## OSHA Process Safety

Propane	Not regulated.
Carbon Monoxide	Not regulated.
Carbon Dioxide	Not regulated.
Air	Not regulated.

## State Regulations

CA Proposition 65	
Propane	Not regulated.
Carbon Monoxide	WARNING: This product can expose you to chemicals including Carbon Monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .
Carbon Dioxide	Not regulated.
Air	Not regulated.

## Canadian Regulations

	WHMIS Classification
Propane	A, B1.
Carbon Monoxide	A, B1, D1A, D2A.
Carbon Dioxide	A
Air	A

## National Inventory Status

	US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Propane	Listed on inventory.	Not listed.	Listed on inventory.
Carbon Monoxide	Listed on inventory.	Not listed.	Listed on inventory.
Carbon Dioxide	Listed on inventory.	Not listed.	Listed on inventory.
Air	Not listed on inventory.	Not listed.	Not determined.

## Section 16: Other Information

	NFPA Rating
Propane	HEALTH=2 FIRE=4 REACTIVITY=0
Carbon Monoxide	HEALTH=2 FIRE=4 REACTIVITY=0
Carbon Dioxide	HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA
Air	HEALTH=0 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard