

**SECTION 1 - IDENTIFICATION**

Product Name: Endothermic Gas  
 Synonyms: Endo, Endo Gas RX Gas  
 SDS Number: 285, 288, Special Gas Mixtures  
 Product Use Description: Industrial Applications, Scientific Applications, Calibration  
 Company: Company Name  
 Street Address  
 City, ST ZIP  
 Emergency Telephone Number (CHEMTREC): (800) 424-9300  
 Telephone Number for Information: (###) ###-####

**SECTION 2 – HAZARD IDENTIFICATION**

Classification: Flammable Gases, Category 1

Signal Word: **DANGER**

Pictogram:



Hazard Statement: OSHA –H01 – May Displace Oxygen and Cause Rapid Suffocation

H220 - Extremely Flammable Gas

H331 – Toxic if Inhaled

H360 – May Damage Fertility or the Unborn Child

H372 – Causes Damage to Organs (Central Nervous System) Through Prolonged or Repeated Exposure

Prevention Statement: Keep Away from Heat/Sparks/Open Flames/Hot Surfaces. No Smoking.

Response Statement(s): P360 – Do Not Breathe Gas

P372 – Explosion Risk

P377 – Leaking Gas Fire: Do Not Extinguish, Unless Leak can be Stopped Safely

P380 – Evacuate Area

P381 – Eliminate All Ignition Sources if Safe to do so

Storage Statement(s): None Allocated

Disposal Statement(s): None Allocated

**SECTION 3 – COMPOSITION/INGREDIENTS**

Substances / Mixtures

Ingredient	CAS Number	EC Number	Content (v/v)
HYDROGEN	1333-74-0	215-605-7	< 40%
METHANE	74-82-8	200-812-7	< 1%
CARBON MONOXIDE	630-08-0	211-128-3	< 20%
NITROGEN	7727-37-9	231-783-9	REMAINDER
CARBON DIOXIDE	124-38-9	204-696-9	< 0.2%

**SECTION 4 – FIRST-AID MEASURES****4.1 Description of First Aid Measures:**

Eye:	Immediately Flush Eyes thoroughly with Water for at Least 15 minutes. Hold Eyelids open and Away from Eyeballs to Ensure that all Surfaces are Flush Thoroughly. Contact Ophthalmologist Immediately if Eye Irritation Persists
Inhalation:	Remove to Fresh Air and Keep in Rest in a Position comfortable for Breathing. If not Breathing, Give Artificial Respiration. If Breathing is Difficult, Trained Personnel Should Give Oxygen. Call a Physician.  To Protect Rescuer, Use an Air-Line Respirator or Self Contained Breathing Apparatus (SCBA).
Skin Contact:	Wash with Plenty of Soap and Water. If Skin Irritation Occurs get Medical Attention
Ingestion:	Not Expected to be Primary Route of Exposure.

**4.2 Most Important Symptoms and Effects, Both Acute and Delayed**

Symptoms/Injuries:	Effects are Due to Lack of Oxygen. Moderate Concentrations may Cause Headache, Drowsiness, Dizziness, Excitation, Excess Salivation, Vomiting, and Unconsciousness. Prolonged Exposure to Low Concentrations of Carbon Monoxide can Kill.
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**4.3 Indication of Immediate Medical Attention and Special Treatment Needed**

No Additional Information Available.

**SECTION 5 – FIRE-FIGHTING MEASURES****5.1 Extinguishing Media**

Stop flow of Gas if Safe to do so. If the Gas Source cannot be isolated, do not Extinguish the Flame, Since Re-ignition and Explosion Could Occur. Await arrival of Emergency Services or Manufacturer's Advisor.

**5.2 Special Hazards Arising from the Substance or Mixture**

Extremely Flammable. Eliminate All Ignition Sources Including Cigarettes, Open Flames, Spark Producing Switches/Tools, Heaters, Naked Lights, Pilot Lights, Mobile Phones, etc

**5.3 Advice for Firefighters**

This Material is Capable of Forming Explosive Mixtures in Air

**5.4 Hazchem Code**

**2SE**  
2 Fine Water Spray  
S Risk of Violent Reaction or Explosion. Wear Full Fire Kit and Breathing Apparatus.  
E Evacuation of People In and Around the Immediate Vicinity of the Incident Should be Considered.

**SECTION 6 – ACCIDENTAL RELEASE MEASURES****6.1 Personal Precautions, Protective Equipment, and Emergency Procedures**

If Leaking, Evacuate Area of Personnel. Inform Manufacturer of Leak. Wear Self-Contained Breathing Apparatus when Entering Area Unless Atmosphere is Proved to be Safe. Ensure Adequate Air Ventilation. Eliminate All Sources of Ignition. Consider the Risk of Potentially Explosive Atmospheres.

**6.2 Environmental Precautions**

Prevent from Entering Sewers, Basements, and Workpits, or Any Place Where Its Accumulation can be Dangerous.

**6.3 Methods of Clean-Up**

No Information Provided

**6.4 Reference to Other Sections**

See Sections 8 and 13 for Exposure Controls and Disposal

**SECTION 7 – HANDLING AND STORAGE****7.1 Precautions for Safe Handling**

Use of Safe Work Practices are Recommended to Avoid Inhalation.

**7.2 Conditions for Safe Storage, Including Any Incompatibilities**

No Information Provided

**7.3 Specific End Use(s)**

No Information Provided

**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTIONS****8.1 Control Parameters****Occupational Exposure Limits**

Ingredient	Reference	Time Weighted Average		Short Term Exposure Limit	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Carbon Dioxide	OSHA PEL	5000	9000	30000	54000
Carbon Monoxide	OSHA PEL	50	55		
Nitrogen	OSHA PEL	Asphyxiant			
Hydrogen	OSHA PEL	Not Established - Asphyxiant			
Methane	OSHA PEL	Not Established - Asphyxiant			

**8.2 Exposure Controls**

Provide Suitable Ventilation to Minimize or Eliminate Exposure. Confined Areas Should be Adequately Ventilated or Gas Detected

**Personal Protective Equipment**

Eye/Face: Wear Safety Glasses

Hands: Wear Leather Gloves

Body: Wear Safety Boots

Respiratory: Where and Inhalation Risk Exists, Wear Self Contained Breathing Apparatus (SCBA) or an Air-Line Respirator

**SECTION 9 – PHYSICAL and CHEMICAL PROPERTIES****9.1 Information on Basic Physical and Chemical Properties**

**Appearance** Colorless Gas

**Odor** Odorless

<b>Flammability</b>	Extremely Flammable
<b>Flash Point</b>	< 75°F / <23°C
<b>Boiling Point</b>	Not Available
<b>Melting Point</b>	Not Available
<b>Evaporation Rate</b>	Not Available
<b>pH</b>	Not Available
<b>Vapor Density</b>	Not Available
<b>Specific Gravity</b>	Not Available
<b>Solubility (Water)</b>	0.018 L/L (Hydrogen)
<b>Vapor Pressure</b>	Not Available
<b>Upper Explosion Limit</b>	75% (Hydrogen)
<b>Lower Explosion Limit</b>	4% (Hydrogen)
<b>Partition Coefficient</b>	Not Available
<b>Autoignition Temperature</b>	Not Available
<b>Decomposition Temperature</b>	Not Available
<b>Viscosity</b>	Not Available
<b>Explosive Properties</b>	Not Available
<b>Oxidizing Properties</b>	Not Available
<b>Odor Threshold</b>	Not Available

## 9.2 Other Information

No Information Provided

## SECTION 10 – STABILITY and REACTIVITY

### 10.1 Reactivity

Carefully review All Information Provided in Sections 10.2 and 10.6

### 10.2 Chemical Stability

Stable Under Normal Conditions

### 10.3 Possibility of Hazardous Reactions

Polymerization will not Occur

### 10.4 Conditions to Avoid

Avoid Heat, Sparks, Open Flames, and Other Ignition Sources

**10.5 Incompatible Materials**

Incompatible with Oxidizing Agents (e.g. Hypochlorite), Acids (e.g. Nitric Acid), Heat and Ignition Sources. Do Not Use Natural Rubber Flexible Hoses. Also Incompatible (Potentially Violently) with Oxygen, Halogens, and Metal Halides. Stress Corrosion Cracking Can Occur in Steels.

**10.6 Hazardous Decomposition Products**

This Material will not Decompose to Form Hazardous Products Other Than That Already Present

**SECTION 11 – TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects**

Acute Toxicity                      Inhalation Gas: TOXIC IF INHALED

<b>Carbon Monoxide (630-08-0)</b>	
LC50 Inhalation Rate (ppm)	1880 ppm/4h
ATE US (Gases)	1880.00 ppmV/4h

Skin Corrosion/ Irritation:	Not Classified pH: Not Applicable
Serious Eye Damage/Irritation:	Not Classified pH: Not Applicable
Respiratory or Skin Sensitization:	Not Classified
Germ Cell Mutagenicity	Not Classified
Carcinogenicity:	Not Classified
Reproductive Toxicity:	May Damage Fertility or the Unborn Child
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
Aspiration Hazard:	Not Classified
Acute Toxicity	Not Classified

<b>Hydrogen (1333-74-0)</b>	
LC50 Inhalation Rate (ppm)	> 15000 ppm/1h

Skin Corrosion/ Irritation:	Not Classified pH: Not Applicable
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Serious Eye Damage/Irritation:	Not Classified pH: Not Applicable
Respiratory or Skin Sensitization:	Not Classified
Germ Cell Mutagenicity	Not Classified
Carcinogenicity:	Not Classified
Reproductive Toxicity:	Not Classified
Specific Target Organ Toxicity: (Single Exposure)	Not Classified
Specific Target Organ Toxicity: (Repeated Exposure)	Not Classified
Aspiration Hazard:	Not Classified

## SECTION 12 – ECOLOGICAL INFORMATION (NON-MANDATORY)

### 12.1 Toxicity

No Information Provided

### 12.2 Persistence and Degradability

No Information Provided

### 12.3 Bioaccumulative Potential

No Information Provided

### 12.4 Mobility in Soil

No Information Provided

### 12.5 Other Adverse Effects

No Known Ecological Damage is Caused by This Product

## SECTION 13 – DISPOSAL CONSIDERATIONS (NON-MANDATORY)

### 13.1 Waste Treatment Methods

Waste Disposal Recommendations: Dispose of in Accordance with Local/Regional/National/International Regulations

**SECTION 14 – TRANSPORT INFORMATION (NON-MANDATORY)**

No Information Provided

**SECTION 15 – REGULATORY INFORMATION (NON-MANDATORY)****15.1 U.S. Federal Regulations****Carbon Monoxide (630-08-0)**

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

SARA Section 311/312 Hazard Classes

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

**Carbon Dioxide (124-38-9)**

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

SARA Section 311/312 Hazard Classes

Immediate (Acute) Health Hazard
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**Hydrogen (1333-74-0)**

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

SARA Section 311/312 Hazard Classes

Fire Hazard
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**Methane (74-82-8)**

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

SARA Section 311/312 Hazard Classes

Fire Hazard
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**SECTION 16 – OTHER INFORMATION**

No Information Provided