

# Medical Drug Gases

## Carbon Dioxide (CO<sub>2</sub>) USP

Cylinder Color: Gray

A colorless, odorless, nonflammable, slightly acidic gas that is about one and one half times as heavy as air. A carbon dioxide concentration of three percent (by volume) can cause impairment of performance during prolonged exposure. A 7.6 percent concentration may cause an increase in heart rate and blood pressure. Dyspnea (labored breathing), headache, dizziness, and sweating may result if exposure is prolonged. Exposure to ten percent concentration will result in unconsciousness in less than one minute. Carbon dioxide is shipped as a liquefied compressed gas at its vapor pressure of 838 psig (58.91 kg/cm<sup>2</sup>) at 70° F (21° C).

### Medical Applications

For close-to-physiologic atmospheres for the operation of artificial organs; in cryosurgery; with insufflators during laproscopic surgery; and as a component in a mixture of oxygen or air as a respiratory stimulant to promote deep breathing.

**Before use, you should read and fully understand the Material Safety Data Sheet (MSDS) for this product.**

### SPECIFICATIONS

<b>Major Hazards</b> .....	High Pressure and Inhalation
<b>Exposure Limit</b> .....	TLV: TWA of 5000 ppm, STEL of 30000 ppm (ACGIH 1995-2001)
<b>Fire Potential</b> .....	Nonflammable
<b>Odor</b> .....	None
<b>Mol. Wt.</b> .....	44.01
<b>Sp. Gr. (Air = 1) 70° F (21° C)</b> .....	1.522
<b>Critical Temperature</b> .....	87.8° F (31° C)
<b>Critical Pressure</b> .....	1071.6 psia (75.3 kg/cm <sup>2</sup> abs)
<b>Specific Volume</b> .....	8.74 ft <sup>3</sup> /lb at 70° F (0.534 m <sup>3</sup> /kg at 15° C)
<b>CAS Registry No.</b> .....	124-38-9
<b>DOT Description</b> .....	Carbon Dioxide, 2.2, UN1013 Carbon Dioxide, Refrigerated Liquid, 2.2, UN2187

### PURITY SPECIFICATIONS

<b>USP</b> .....	99.0% CO <sub>2</sub> by volume, min.
<b>H<sub>2</sub>S</b> .....	<1 ppm
<b>CO</b> .....	<10 ppm
<b>NO<sub>2</sub></b> .....	<2.5 ppm
<b>NO</b> .....	<2.5 ppm
<b>NH<sub>3</sub></b> .....	<25 ppm
<b>SO<sub>2</sub></b> .....	<5 ppm
<b>H<sub>2</sub>O</b> .....	<200 ppm

VALVE CONNECTION	CYLINDER SIZE	CONTENTS	PRESSURE psig @ 70° F	NOMINAL GROSS WT.	PART NUMBER	RECOMMENDED Regulator or Valve	MODEL/PAGE
<b>CGA 320 (Threaded)</b>	180LT	402 lb 182 kg	350 psig 2413 kg/cm <sup>2</sup>	686 lb 311 kg	CD USP180LT	Regulator	30/54
<b>CGA 320 (Threaded)</b>	190	56 lb 25.4 kg	838 psig 58.91 kg/cm <sup>2</sup>	156 lb 70.8 kg	CD USP56	Regulator	30/54
<b>CGA 320</b>	CD	50 lb 22.7 kg	838 psig 58.91 kg/cm <sup>2</sup>	150 lb 68.2 kg	CD USP50	Regulator	30/54
<b>CGA 940 (Pin-Indexed)</b>	ME	6 lb 7 oz 2.92 kg	838 psig 58.91 kg/cm <sup>2</sup>	21 lb 9.5 kg	CD USPME	Regulator	30/54
<b>CGA 940 (Pin-Indexed)</b>	ED	5 lb 8 oz 2.49 kg	838 psig 58.91 kg/cm <sup>2</sup>	17 lb 8 kg	CD USPED	Regulator	30/54
<b>CGA 940 (Pin-Indexed)</b>	MD	3 lb 14 oz 1.76 kg	838 psig 58.91 kg/cm <sup>2</sup>	13 lb 6 kg	CD USPMD	Regulator	30/54