

XENON Propulsion Grade

Description Propulsion Grade Xenon gas is specially purified and intended for use in electric propulsion thrusters which are used in satellites and other spacecraft. Xenon gas is odorless, colorless, tasteless, nontoxic, monatomic and chemically inert. Xenon is found in the atmosphere at a concentration of 8.7×10^{-6} percent by volume. Linde collects xenon at its air separation plants around the world and purifies it to the very high purity levels necessary for electric propulsion engines.

Advanced production and purification equipment gives Linde the unique ability to recover and purify customer provided xenon. This service is often used by ground-based facilities that collect the xenon used to test electric propulsion thrusters.

Linde has sophisticated analytical labs to ensure the consistent high quality of Propulsion Grade Xenon. These labs are also used to support our customers ensuring purity is maintained throughout the satellite filling process.

Linde Material Safety Data Sheets (MSDS) are available for Xenon and should be used as guidelines in regard to first aid, methods of storage, handling and general use of Xenon gas.

Purity Specifications

Xenon, Propulsion Grade

Xenon concentration	99.9995%
Maximum impurities	
Component	Concentration (PPM)
Argon	1.0
Carbon Monoxide	0.1
Carbon Dioxide	0.1
Hydrogen	1.0
Moisture (H ₂ O)	0.1
Krypton	2.0
Nitrogen	1.0
Oxygen	0.1
Total Fluorocarbons	0.1
Total Hydrocarbons	0.1

Cylinder Information

	Cylinder Size Internal Volume Water Liters	Volume Liters
	49	7500 / 10000
	44	6000
	16	2000
	8	1000
Non-Refillable Cylinders	3.7	500/1000

Additional cylinder sizes are available on request. Cylinders use CGA 580, DIN 6, and other values.

Physical Constants

Chemical name		Xe
Molecular weight		131.3
Density of the gas at 70 °F (+21 .1 °C), 1 atm		0.3416 lb/ft ³ , 5.472 kg/m ³
Specific gravity of the gas at 70°F (+21 .1°C), 1 atm		4.560
Specific volume of the gas at 70°F (+21 .1°C), 1 atm		2.927 ft ³ /lb, 0.183 m ³ /kg
Boiling point at 1 atm		-162.6 °F, - 108.2 °C
Melting point at 1 atm		-168 °F, -111 °C
Critical temperature at 1 atm		+61.9 °F, +16.6 °C
Critical pressure		847.0 psia, 58.4 bar
Critical density		68.67 lb/ft ³ , 1100 kg/m ³
Triple point at 11.84 psia (0.816 bar)		-169.2 °F, -112.8 °C
Latent heat of vaporization at boiling point		41.4 Btu/lb, 96.3 kJ/kg
Latent heat of fusion at triple point		7.57 Btu/lb, 17.6 kJ/kg
Specific heat of the gas at 70°F (+21.1°C), 1 atm	Cp	0.038 Btu/(lb) (°F) 0.269 kJ/ (kg) (°C)
	Cv	0.023 Btu/(lb) (°F) 0.096 kJ/ (kg) (°C)

Shipping Data

Synonyms		Xe
CAS Register Number		7440-63-3
DOT Classification		Nonflammable gas
DOL label		Nonflammable gas
Transport Canada Classification		2.2
Substance Identification (SI)		2036
UN Number		UN 2036
Hazards		High Pressure and suffocation
Toxicity (TLV)		Asphyxiant
Flammability Range (in air)		Nonflammable gas
Odor		None

Linde Electronics and Specialty Gases

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