Deuterium. D_2

Product information

Deuterium is also known as “heavy hydrogen” due to the added mass of the neutron. It is used in a variety of applications, ranging from university and industrial research comparisons between the hydrogen and deuterium in deposited film analysis, to use as a rapid thermal anneal for certain semiconductor devices where deuterium’s higher bond energy is desired. Deuterium is also used optical fiber manufacturing to eliminate the water peak at 1390nm which significantly decreases fiber attenuation in the E band. Linde has high pressure (6000psi) packages specifically designed for this application. Please inquire. Deuterium is a highly flammable and asphyxiant gas.

Characteristics

Flammable. Colourless and odourless. Gas density is lighter than air.

Physical data

Molecular weight	[g/mol]	4.032		
Density	at 1.013 bar, 15 °C [kg/m³]	0.171	at 1 atm., 70 °F [lb/ft³]	0.01
Critical pressure	at 0 °C [bar]	16.64	at 32 °F [psi]	241.34
Critical temperature	[°C]	-234.8	[°F]	-390.64
Flammability range in air (% volume)		5-75		
Specific gravity	at 70°F, 1 atm(Air=1)	0.139		

Product specification

Purity grade	Typical purity	Isotopic enrichment	Typical impurities [ppm]							
			CO_2	CO	Deuterium Hydride + H_2	Moisture	N_2	O_2	H_2	THC (as Methane)
5.0N	≥99.999 %	≥99.75 atom %	<1	<1	<5000	<1	<1	<1	<100	<1

Contact our team for higher grade or different specification products.

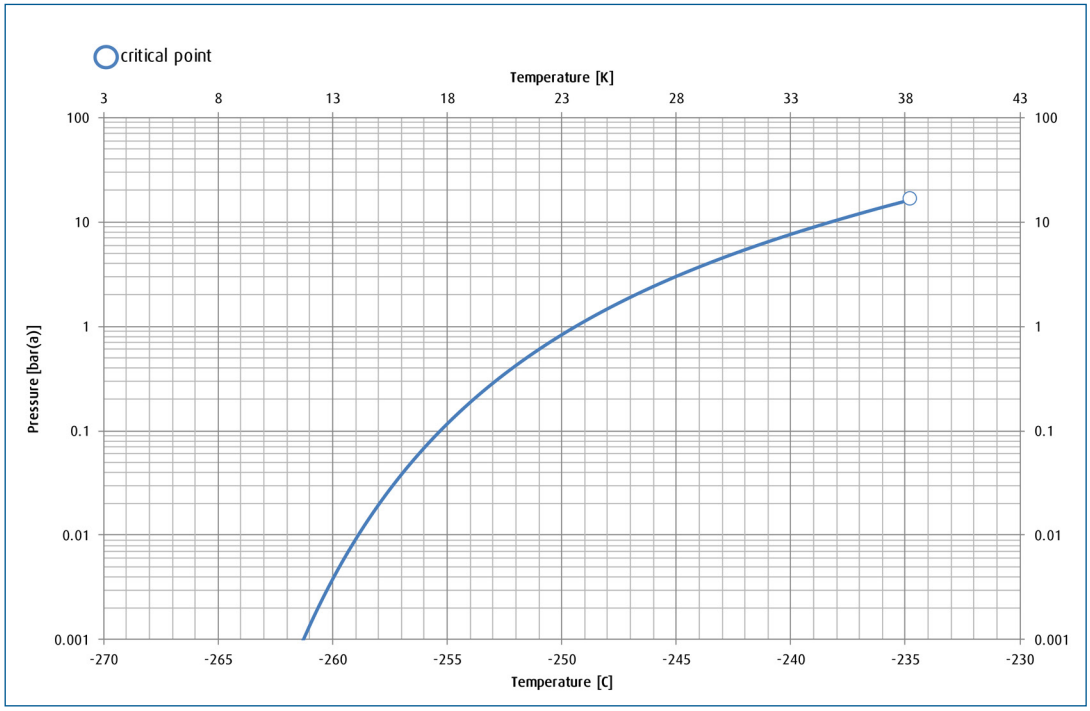
Shipping information

UN number	CAS number	EC number	DOT label	Hazard labels required
1957	7782-39-0	231-952-7	Flammable gas	ADR Class 2, 1F DOT Class 2.1

Packaging information

	Package options	Cylinder designation	Cylinder internal volume	Cylinder material	Cylinder diameter	Cylinder height to valve outlet	Cylinder tare weight	Fill contents	Pressure (psig) @ 70°F	Valve outlet	Valve material
US	Cylinder	300	49.6L	Steel	9.25 in	56 in	143 lb	7300 liter	2400 (psig) @ 70°F	CGA 724/ CGA 350	SS
	Cylinder	200	44L	Steel	9 in	52 in	133 lb	3500 liter	2265 (psig) @ 70°F	CGA 724/ CGA 350	SS
	Cylinder	200	44L	Steel	9 in	52 in	133 lb	5500 liter	2000 (psig) @ 70°F	CGA 724/ CGA 350	SS
	Cylinder	30	8L	Steel	6.75 in	19.75 in	28 lb	1000 liter	2000 (psig) @ 70°F	CGA 724/ CGA 350	SS
China	Cylinder	49L	49L	Steel	237 mm	1500 mm	65 kg	7500 liter	150 (bar) @ 20°C	CGA 350	SS

Vapor pressure curve



Additional information

The information, recommendations, and data contained in this publication are intended to give basic guidance for safe handling and use of gases. For more information, please refer to Safety Data Sheets. You can locate these through the Linde Safety Data Sheet Search. It is essential for the safe use of gases that personnel are properly trained and are fully aware of the possible hazards. Further information and advice on any matter relating to the safe handling or use of these products may be obtained from the nearest Linde office.

Please visit www.linde.com/electronics for Linde Electronics sales offices information.