

## DESCRIPTION

Neon has three stable isotopes, Ne-20, Ne-21, Ne-22. Ne-20 and Ne-22 are the principle isotopes found in Helium-Neon laser applications. One of a number of critical applications is the use of ring lasers found in commercial, space and military guidance, navigation and control systems.

The Ring Laser Gyros (RLG) can be used as the stable elements (for one degree of freedom each) in an inertial guidance system. The advantage of using a RLG is that there are no moving parts. Compared to the conventional spinning gyro, this means there is no friction, which in turn means there will be no inherent drift terms. Additionally, the entire unit is compact, lightweight and virtually indestructible, meaning it can be used in aircraft.

<b>PHYSICAL CONSTANTS (AS NATURAL ABUNDANT NEON)</b>		
Chemical name	Ne-20	
Molecular weight		
Density of the gas at 70°F (21,1°C), 1 atm	0.05215 lb/ft3, 0.83536 kg/ m3	
Specific gravity of the gas at 70°F (21,1°C), 1 atm	0.696	
Specific volume of the gas at 70°F (21,1°C), 1 atm	19.18 ft3/lb, 1.197 m3/kg	
Boiling point at 1 atm	-410.9°F, -246.0°C	
Melting point at 1 atm	-415.6°F, -248.7°C	
Critical temperature at 1 atm	-379.8°F, -228.8°C	
Critical pressure	384.9 psia, 26.54 bar	
Critical density	30.15 lb/ft3, 483 kg/m3	
Triple point at 6.29 psia (0.434 bar)	-415.4°F, -248.6°C	
Latent heat of vaporization at normal boiling point	37.08 Btu/lb, 86.3 kJ/kg	
Latent heat of fusion at triple point	7.14 Btu/lb, 16.6 kJ/kg	
Specific heat of the gas at 70°F (21,1°C), 1 atm	Cp	0.25 Btu/(lb) (°F) 1.05 kJ/(kg) (°C)
	Cv	0.152 Btu/(lb) (°F) 0.636 kJ/(kg) (°C)

(Continued)



**PURITY SPECIFICATIONS (MAXIMUM IMPURITY LEVELS)\***

Contaminant	Purity: $\geq$ 99.0% Enrichment $\geq$ 99.0%
Carbon Dioxide (CO <sub>2</sub> )	0.2 ppm
Carbon Monoxide (CO)	0.2 ppm
Helium (He)	10.0 ppm
Hydrogen (H <sub>2</sub> )	1.0 ppm
Nitrogen (N <sub>2</sub> )	1.0 ppm
Oxygen (O <sub>2</sub> )	1.0 ppm
Water (H <sub>2</sub> O)	1.0 ppm

\* Higher purities are available upon request.

**CYLINDER INFORMATION**

Cylinder Size	Valve Outlet	Volume Liters	Gross Weight Lbs/Kg	Pressure Psig/Bar
Contact your local Spectra Gases representative				

**SHIPPING DATA**

Synonyms	Neon – 20
CAS Register Number	7440-59-7
DOT Classification	Nonflammable gas
DOT Label	Nonflammable gas
Transport Canada Classification	2.2
Substance Identification (SI)	1046
UN Number	UN 1046
Hazards	High Pressure and suffocation
Toxicity (TLV)	Asphyxiant
Flammability Range (in air)	Nonflammable gas
Odor	None