



Garlock Graph-Lock® 3120

Nuclear Grade Graphite Gasketing³

MATERIAL PROPERTIES*

Composition:	Nuclear grade graphite
	-High purity grade 99.0% graphite that is composed of natural graphite flake that has been acid washed, expanded under heat and then compressed into sheets. It contains no fillers or binders.
Color:	Black
Temperature², °F (°C)	
Minimum:	-400 (-240)
Continuous Max:	+850 (+454)
Pressure², Maximum, psig (bar):	2000 (138)
P x T (max.)², psig x °F (bar x °C)	
1/32 and 1/16":	700,000 (25,000)
1/8":	350,000 (12,000)
Meets Sp 1/8":	Fire Safe

PHYSICAL PROPERTIES*

ASTM F36	Compressibility, %:	40
ASTM F36	Recovery, %:	17
ASTM F38	Creep Relaxation, %:	5
ASTM F152	Tensile, Across Grain, psi (N/mm²):	600 (4)
ASTM F1315	Density, lbs./ft.³ (grams/cm³):	70 (1.12)

SEALING CHARACTERISTICS*

	ASTM F37B Fuel A	ASTM F37B Nitrogen	DIN 3535- 4 Gas Permeability
Gasket Load, psi (N/mm²):	500 (3.5)	3000 (20.7)	4640 (32)
Internal Pressure, psig (bar):	9.8 (0.7)	30 (2)	580 (40)
Leakage	0.2 ml/hr.	0.5 ml/hr.	0.4 cc/min

Chemical Impurity Data

Total Heavy Metals			
Low Melting Point Metals**, Max., ppm			
Totally:	500	Individually:	200
** Low melting point metals are as follows: zinc, cadmium, mercury, lead, tin, silver, arsenic, bismuth, antimony, gallium and indium.			
Chemical Limits			
Leachable Levels, Max., ppm		Total Chemical Limits, Max., ppm	
Chlorides:	50	Total Chlorides:	450
Water Leachable Halogens***:	50	Total Fluorides:	300
*** Includes fluorides, chlorides, bromides		Total Sulfur:	630
and iodides.		Total Nitrites:	<1
		Total Nitrates:	820

Notes:

This is a general guide and should not be the sole means of selecting or rejecting this material. ASTM test results in accordance with ASTM F-104; properties based on 1/32" (0.8mm) sheet thickness unless otherwise mentioned. The above data is based on unbranded and homogeneous (non-laminated) material only. The total sulfur level will be affected by the adhesive used in laminated sheet.

* Values do not constitute specification Limits

² Based on ANSI RF flanges at our preferred torque. When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum P x T, consult Garlock Applications Engineering.

³ This nuclear certifiable grade can be approved for critical nuclear applications including U.S. Navy Mil-Spec Mil-P-24503A(SH) and General Electric specs D50YP12 and NEDC-31735P.