

DURLON® 9000/9000N

Inorganic Filler with Pure PTFE Resins
FILLED PTFE GASKET MATERIAL
ASTM F104: F452111-A9B5E11K6M6

APPLICATION:

DURLON® 9000/9000N is used extensively in chemical, pulp and paper, food and beverage and the railroad tankcar industries. It has been tested and approved for liquid chlorine, caustics, liquid oxygen, and high purity applications in the pharmaceutical industry (9000N, blood components manufacturing). DURLON® 9000 and 9000N are designed for applications where resistance to highly aggressive chemicals is required. Available in unpigmented white as style 9000N. Both styles 9000 and 9000N, (including branding) conform to FDA requirements.

DRY CHLORINE/CAUSTICS: DURLON 9000 has been proven through the "Test Protocol" of the Chlorine Institute and is listed as an [acceptable](#) gasket material for [Dry Chlorine service \(both liquid and gaseous\)](#) in [Pamphlet 95, Edition 3 of the Chlorine Institute](#). DURLON 9000 was independently tested and [approved for Caustics service](#) by a major caustic/chlorine chemical manufacturer. Additionally, our own in-house testing in 50% caustics coupled with independent analysis (TGA, IR) showed DURLON 9000 to be unaffected. Unlike generic glass fiber filled PTFEs, the shape of the fillers used in DURLON 9000 do not allow wicking which could either degrade the gasket or cause corrosion on flange faces.

OXYGEN: DURLON 9000/9000N has been [independently tested and certified by the Federal Institute for Research and Testing, Berlin \(BAM\)](#) for [gaseous oxygen](#) at pressures up to 585 psi (40 bar) and temperatures up to 392°F (200°C), and for service in [liquid oxygen](#). Gaskets for oxygen service can be supplied from distributor stocks, providing proper cleaning procedures for oxygen service are followed before installation.

Note: As a class, [PTFE gasket materials are not recommended in liquid oxygen services where there is THERMAL CYCLING](#) due to thermal shock and the difference of the coefficient of expansion between PTFE and metal flanges and bolting.

COMPOSITION:

Various shapes of inorganic fillers have been homogeneously blended with pure PTFE resins to give DURLON® 9000 its physical and mechanical properties. It is suitable for use in steel flanges and will not exhibit the cold flow problems associated with virgin PTFE or the hardness problems of some other filled PTFE products. It cuts easily and separates cleanly from flanges after use.

TYPICAL PROPERTIES:

Color:	Style 9000 - Blue, branded Style 9000N - White, branded
Filler:	Inorganic
Temperature Range:	-350 to 520°F (-212 to 271°C)
Pressure, max:	1500 psig (103 bar)
Fluid Services:	Steam, Oils, Liquid Chlorine, Acids, Caustics, Hydrogen Peroxide, Titanium Dioxide, Oleum, Liquid & Gaseous Oxygen
Density:	2.2 g/cm ³ (138 lbs./ft ³)
Tensile Strength, ASTM F152:	2,000 psi (13.8 MPa)
Compressibility, ASTM F36:	8 to 16%
Recovery ASTM F36:	40%
Sealability ASTM F37 (Fuel A): ASTM F37 (Nitrogen):	0.01 mL/hr 0.02 mL/hr
DIN 3535 Gas Permeability:	0.01 cc/min
TA-Luft (VDI Guideline 2440): temperature of exposure: period of exposure: test pressure (helium): leak rate: period leak rate measured:	Approved 180°C (356°F) 48 h 1 bar (14.5 psig) 7.55E-6 mbar*(m*s) 24 h

BAM - Oxygen Testing:	Gaseous oxygen up to 40 bar (580 psig) and 200°C (392°C) Liquid oxygen
Pamphlet 95, The Chlorine Institute:	Listed Table 3-1, for dry chlorine service and Table 3-3, for wet chlorine service
FDA	Conforms to the requirements of 21 CFR 177.1550 for food and drug contact.
Volume Resistivity, ASTM D257:	1.0 x 10 ⁵ ohm-cm
Dielectric Breakdown, ASTM D149:	16 kV/mm (406 V/mil)
Creep Relaxation ASTM F38:	30%
Flexibility, ASTM F147:	5x

Note: ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

*For applications above Class 300, consult your representative.

M&Y AND PROPOSED ASTM GASKET CONSTANTS:

THICKNESS	1/16"	1/8"
M	2.2	4.6
Y psi (MPa)	1937 (13.36)	1639 (11.3)
Gasket Constants		
G_b psi (MPa)	639 (4.4)	495 (3.41)
a	0.22	0.262
G_s psi (MPa)	55 (0.38)	65 (1.45)

*Gasket Constants based on proposed ASTM Draft 10.1

AVAILABLE SHEET SIZES:

NOMINAL THICKNESS	SHEET SIZES		ORDER CODE 9000	ORDER CODE 9000N	APPROX. WT/ SHEET lbs (kg)
	inches	mm			
1/64" 0.5mm	60 x 60	1524 x 1524	TB05-060-060	TN05-060-060	4 (2)
1/32" 0.8mm	60 x 60	1524 x 1524	TB08-060-060	TN08-060-060	9 (4)
1/16" 1.5mm	60 x 60	1524 x 1524	TB15-060-060	TN15-060-060	18 (8)
2.0mm	60 x 60	1524 x 1524	TB20-060-060	TN20-060-060	24 (11)
3/32" 2.5mm	60 x 60	1524 x 1524	TB25-060-060	TN25-060-060	27 (12)
1/8" 3.0mm	60 x 60	1524 x 1524	TB30-060-060	TN30-060-060	36 (16)
3/16" 5.0mm	60 x 60	1524 x 1524	TB50-060-060	TN50-060-060	54 (24)

Note: 1mm thickness or, 60" x 120" (1.5m x 3m) sheet sizes available on special order, other custom lengths available on request.

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