

Technical Datasheet

High Temperature Perfluoroelastomer for Plasma Applications

PZ® XL15 ULTRA PURE is a translucent compound made of a semi-crystalline nano-filler. This compound is developed to handle the most demanding fluorine, chlorine and oxygen plasmas as well as the most aggressive acids and solvents used in semiconductor processing. PZ® XL15 ULTRA PURE is also recommended for extreme applications in the bio-analytical industry.



Features and Benefits

- Superior physical properties
- Excellent chemical and temperature resistance
- Excellent oxygen, chlorine and fluorine compatibility
- Low particulation
- Low out-gassing
- Low permeability

Semiconductor Applications

- Deposition: CVD, APCVD,
- HDPCVD, RPCVD, SACVD
- Plasma Etch: oxide and metal
- Ashing
- Ion Implant
- RTP
- Lamp Anneal
- Diffusion

Equipment Location

- Bell Jar Seals
- Chamber Lid Seals
- Door Seals
- End Point Windows
- Gas Inlet Seals
- Isolator Valve Seals
- KF-Fittings
- Slit Valves
- Window Seals



Typical Physical Properties

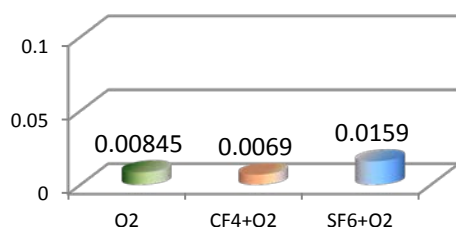
Color	Translucent	
PROPERTIES	ASTM	VALUE
Hardness, (Shore A)	D2240	68 +/-5
Tensile Strength psi, (MPa), min	D1414	2393 (16.6)
Elongation, %, min	D1414	235
Modulus at 100% psi, (MPa), min	D1414	547 (3.8)
Compression Set, 72 Hrs@200°C (392°F)	D395, Method B	27
Minimum Operating Temperature	-20°C	
Maximum Operating Temperature	260°C	

****EVEN THOUGH ELONGATION PROPERTY IS INDICATED, MOST PERFLUROELASTOMER MATERIALS SHOULD NOT BE STRETCHED FOR OPTIMAL PERFORMANCE.**

Note: color variations may be observed in parts. Variations are considered to be cosmetic and inherent as a result of curing process, not indicative for foreign matter and is not expected to have an adverse effect on the performance of the part in service.

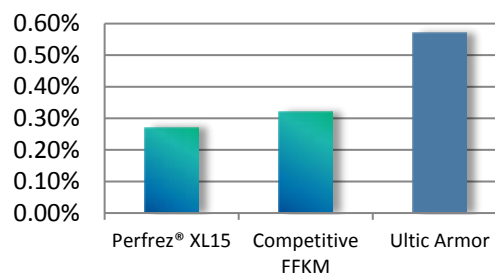
Material Performance

Weight Loss in Direct Plasma Exposure



Test conditions: Direct plasma at 300 watts

Weight Loss at 350°C



TGA Test Duration: 30 mins

PZ® XL15 ULTRA PURE Elemental Analysis:

Leachable - TM by ICP-MS for Elements in Polymer Material

Parameter	RL	Units	XL15
Aluminum (Al)	0.1	ppb (ng/g)	0.7
Antimony (Sb)	0.1	ppb (ng/g)	*
Arsenic (As)	0.1	ppb (ng/g)	*
Barium (Ba)	0.1	ppb (ng/g)	0.7
Beryllium (Be)	0.1	ppb (ng/g)	*
Bismuth (Bi)	0.5	ppb (ng/g)	*
Boron (B)	0.5	ppb (ng/g)	*
Cadmium (Cd)	0.1	ppb (ng/g)	*
Calcium (Ca)	0.5	ppb (ng/g)	*
Chromium (Cr)	0.1	ppb (ng/g)	*
Cobalt (Co)	0.1	ppb (ng/g)	*
Copper (Cu)	0.1	ppb (ng/g)	*
Gallium (Ga)	0.1	ppb (ng/g)	*
Germanium (Ge)	0.1	ppb (ng/g)	*
Gold (Au)	0.5	ppb (ng/g)	*
Iron (Fe)	0.5	ppb (ng/g)	*
Lead (Pb)	0.1	ppb (ng/g)	*
Lithium (Li)	0.1	ppb (ng/g)	0.4
Magnesium (Mg)	0.1	ppb (ng/g)	0.7
Manganese (Mn)	0.1	ppb (ng/g)	*
Molybdenum (Mo)	0.1	ppb (ng/g)	*
Nickel (Ni)	0.1	ppb (ng/g)	0.7
Niobium (Nb)	0.5	ppb (ng/g)	*
Potassium (K)	0.5	ppb (ng/g)	0.8
Rubidium (Rb)	0.1	ppb (ng/g)	*
Silver (Ag)	0.5	ppb (ng/g)	*
Sodium (Na)	0.1	ppb (ng/g)	*
Strontium (Sr)	0.1	ppb (ng/g)	*
Tantalum (Ta)	0.5	ppb (ng/g)	*
Thallium (Tl)	0.5	ppb (ng/g)	*
Tin (Sn)	0.5	ppb (ng/g)	*
Titanium (Ti)	0.5	ppb (ng/g)	*
Vanadium (V)	0.1	ppb (ng/g)	*
Zinc (Zn)	0.5	ppb (ng/g)	*
Zirconium (Zr)	0.1	ppb (ng/g)	0.2



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