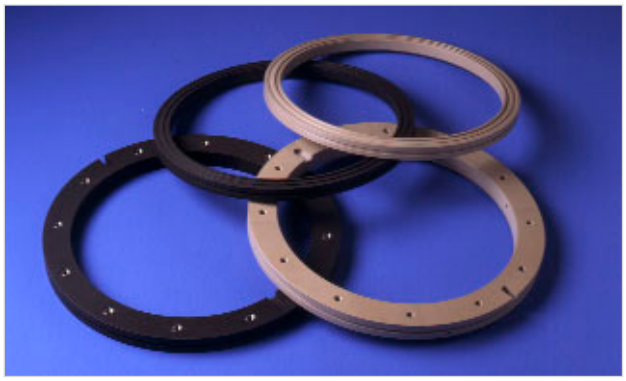
ARLON®-BASED CMP RETAINER RINGS

High Performance Materials and Precision Design

PLASTIC COMPONENTS

Greene, Tweed's CMP Retainer Rings are formulated, designed and machined to meet the unique customer-specific requirements demanded by Chemical Mechanical Planarization (CMP) processes. Manufactured from a full range of chemical-resistant materials including Greene, Tweed's own Arlon® (polyketone-based) material and other compounds, these high-performance thermoplastics are ideal for applications requiring exceptional strength, wear resistance and purity.



FEATURES & BENEFITS

- Excellent chemical resistance
- Various high-performance blends

DESCRIPTION

Arlon 1000—Virgin Polyketone-based

Arlon 1260—Carbon-Fiber Reinforced Polyketone-based

Arlon 1286—Carbon-Fiber Reinforced Polyketone-based

Arlon 1330—PTFE Filled Polyketone-based

RECOMMENDED PROCESS APPLICATIONS

CHEMICAL	CONCENTRATION WEIGHT %	TEMP. RANGE	
		< 135°C	≥ 135°C
Acetic Acid	10	1	1
Ammonia	Conc.	1	1
Ammonium Chloride	37	1	1
Ammonium Hydroxide	10	1	3-4
Nitric Acid	10	1	1-2
Oxalic Acid	10	1	1
Potassium Hydroxide	10	1	2
Sulfuric Acid	<40	2	2

Legend

1 – No attack, possibly slight absorption. Negligible effect on mechanical properties.

2 – Slight attack by absorption. Some swelling and a small reduction in mechanical properties likely. May limit load bearing capabilities under tension.

3 – Moderate attack or appreciable absorption. Material may have limited life. Applications involving tensile stress not recommended.

4 – Material will dissolve or suffer chemical attack in a short time.

Conc. – Concentrated Aqueous Solution

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TYPICAL PROPERTIES

Physical	ARLON® 1000	ARLON® 1260	ARLON® 1286	ARLON® 1330	TYPICAL PPS*	TYPICAL PC**
Color	Natural	Black	Black	Tan	Tan	Varies
Specific Gravity	1.30	1.41	1.49	1.38	1.35	1.20
Melt Point (Pellet), °F (°C)	649 (343)	649 (343)	649 (343)	649 (343)	540 (282)	Not Applicable
Hardness, Shore D	88	92	93	85	85	75
Water Absorption, 24 hrs., %	0.5	0.08	0.08	0.35	0.05	0.15
Mechanical						
Tensile Break Strength, psi	14,000	33,400	37,700	12,600	12,000	10,000
Elongation, %	35.0	1.7	1.3	20	15	94
Flexural Strength, psi	25,300	50,300	56,800	21,100	21,000	13,500
Flexural 0.5% Secant Modulus, psi	600,000	2,750,000	4,040,000	535,000	575,000	340,000
Coefficient of Dynamic Friction PV=12,600 psi ft/min	0.29	0.18	0.14	0.15	0.40	0.38
Izod Impact Strength Notched, ft-lb/inch	1.18	1.65	1.06	1.06	0.60	2.70
Thermal						
Heat Distortion Temperature Under Load, @ 264psi, °F (°C)	350 (177)	600 (316)	600 (316)	330 (165)	250 (121)	275 (135)
Coefficient of Thermal Expansion, <300°F (149°C), inch/inch per °F x 10^{-5}	2.6	0.7	0.5	2.3	2.8	3.8

* PPS – Polyphenylene sulfide **PC – Polycarbonate

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