

## CARBUL

Mesophase Carbon materials are designed to meet most challenging and severe applications where extreme temperature, high stress, abrasion resistance at high speeds and loads are requirements of the application. Material is formulated and treated to optimize specific properties of the final part to meet required design parameters.

PRODUCT DATA SHEET

		CARBUL 28-324/30i	CARBUL 28SIC/30i
Density	lb/in <sup>3</sup>	0.043	0.047
Water Absorption	%	0.0	0.0
Maximum Allowable Service Temperature	°F	570	570
Tensile Strength	psi	5800	4350
Compressive Strength	psi	33360	43510
Flexural Strength	psi	16680	13050
Elongation at Break	%	6	4
Rockwell Hardness	HRC	60	70
Impact Strength	ft*lb/in <sup>2</sup>	2.8-5.1	2.8-5.1
Compatibility with Acids and Basis	pH	0-14	0-14
Surface Contact Pressure	psi		1740
Velocity	Ft/s		115
Dry Friction Coefficient			Less then 0.25
Dynamic Surface Finish	RMS	16	16
Part Parameters Without Machining			
Internal Shape Tolerance	in	0.004	0.004
External Shape Tolerance	%	0.10	0.10
Applications		Impellers	Bearing Wear Rings



### APPLICATIONS

- Pump Impellers
- Gears
- Wear rings
- Seal rings
- Bearings and bushings
- Sleeves
- Thrust washers
- Casings
- Pressure barriers
- Injection molded components

Mesophase Carbon compounds are manufactured using advanced technology that utilizes compression or injection molding to produce close to shape Elastomer like product which in turn subjected to proprietary specialized treatment to provide desired final material properties of the part. Low and predictable compression during manufacturing allows producing complex geometry parts (pump impellers, pistons, hydrodynamic bearings to name a few) with high dimensional and geometric tolerances and smooth surface finish with minimal or no finish machining of the part.

Mesophase Carbon materials family have excellent chemical compatibility with broad range of fluids including crude oil and sea water.

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CABRUL Impellers UNIQUE FEATURES	COMPETITOR FEATURES	BENEFITS	CARBUL	COMPETITOR
Molded and solid formed from a elastomeric composite of Carbul®	Machined from a solid block	<ul style="list-style-type: none"> <li>•Higher efficiency design.</li> <li>•Maximum hydraulic stability.</li> <li>•Reduced radial forces.</li> <li>•Reduces recirculation damage.</li> </ul>	=	=
Mesophase carbon composition	Structural composite	<ul style="list-style-type: none"> <li>•Not subject to stress crack failure.</li> <li>•Outstanding resistance to corrosion &amp; erosion.</li> <li>•Can be repaired.</li> </ul>	=	=
Precision molded and carbonized	Precision machined	<ul style="list-style-type: none"> <li>•Radial forces reduced.</li> <li>•Saves shaft; reduces premature wear.</li> <li>•Bearing lift is increased.</li> <li>•Loading is reduced.</li> <li>•Mechanical seal life is increased.</li> </ul>	Low Cost	Hi Cost
Self-lubricating	Self-lubricating	<ul style="list-style-type: none"> <li>•Allows for the pump to run dry for a reasonable period of time without damage to pump.</li> <li>•Allows for tighter clearances.</li> <li>•Increases efficiency.</li> </ul>	=	=
Resistant to corrosion, erosion and abrasion wear	Resistant to corrosion and erosion	<ul style="list-style-type: none"> <li>•Maintains structural integrity and performance.</li> <li>•Increases the life of the pump.</li> </ul>	=	=