VTEC™ Polyimide Parts & Shapes

Strength, stability and ultra low wear at elevated temperatures

VTEC BG21 BEARING & WEAR TEST DATA

Jet Engine Simulation Testing, Bearing, Pratt & Whitney Test

	Vespel® SP-21	VTEC™ BG21
Tensile	—	**9,266 PSI**
Elongation	—	**14.5%**
Dimensional Stability (% change, 24 hrs@ 260°C)	—	**0.00%**
Total Wear		
260°C	—	**0.010"**
345°C	0.030"	**0.018"**
400°C	0.120"	**0.024"**

Test Conditions: 25 hours, 15° rotation @ 2000 cycle/min & 55 lb. force. All test parts direct formed.

Abrasion Test

	Vespel® SP-21	VTEC™ BG21
Wear		
315°C	0.17mm	**0.08mm**
25°C	0.02mm	**0.00mm**
Coefficient Of Friction		
315°C	0.14	**0.10**
25°C	0.52	**0.66**

Tested at Allied Signal for requirements of aircraft auxiliary power units.

Compressive Strength

Specimen ID	Diameter	Length	Maximum Load	Ultimate Strength
Tested "as received" at room temperature:				
VTEC BG21 (1a)	0.750	1.002	13,693	31.0
VTEC BG21 (1b)	0.750	0.876	15,888	36.0
Tested at 500 ± 5°F (260°C) after 30 minutes at temperature:				
VTEC BG21 (2a)	0.750	0.880	6,033	13.7
VTEC BG21 (2b)	0.750	0.806	6,177	14.0

Rate Of Test: 0.05 inch/minute; Test Method: ASTM D 695-96; Pre-Conditioning: None; Conditioning: None
Note: No obvious failure was observed. The reported maximum load was obtained from the first load drop off.

Specific Gravity And Density

Specimen ID	Initial Weight (grams)	Apparent Weight Loss (grams)	Specific Gravity	Density (grams/c.c.)
VTEC BG21 (1a)	26.653	17.731	1.503	1.499
VTEC BG21 (1b)	20.399	13.568	1.503	1.499

Tested "as received" at room temperature; Test Method: ASTM D 792-91; Pre-Conditioning: None; Conditioning: None.

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