TECANYL VH2 black - Stock Shapes (rods, plates, tubes)

Chemical Designation
PPE (Polyphenylene ether)

Colour
black opaque

Density
1.1 g/cm^3

Fillers
flame retardant (halogen free)

Main features
- flame retardant as per FAR 25.853
- excellent dimensional stability
- very good chemical resistance
- flame retardant according to UL94 V-0
- low smoke emissions
- low moisture absorption
- good electrically insulating

Target Industries
- aircraft and aerospace interiors
- aircraft and aerospace technology
- Railway Interiors
- transportation

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50 mm/min	57	MPa	DIN EN ISO 527-2		(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness
Modulus of elasticity (tensile test)	1mm/min	2300	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	57	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	11	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	20	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	96	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	2100	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5%	19/34/77	MPa	EN ISO 604	3)	
Compression modulus	5mm/min	1300	MPa	EN ISO 604	4)	
Impact strength (Charpy)	max. 7,5J	91	kJ/m^2	DIN EN ISO 179-1eU	5)	
Notched impact strength (Charpy)	max. 7,5J	16	%	DIN EN ISO 179-1eA		
Ball indentation hardness		143	MPa	ISO 2039-1	6)	

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		152	°C	DIN EN ISO 11357		(1) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	long term	85	°C	-		
Service temperature	short term	110	°C	-	1)	
Thermal expansion (CLTE)	23-60°C, longitudinal	8,1	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, longitudinal	8,1	10^{-5} K^{-1}	DIN EN ISO 11359-1;2		

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.08/0.15	%	DIN EN ISO 62		(1) ASTM Test Method 60695-2 (2) ASTM Test Method 60695-2 (3) ASTM Test Method 60695-2 (4) ASTM Test Method 60695-2 (5) Units: 1.5 mm (6) ASTM Test Method 60695-2 (7) passed, 3 mm specimen (8) passed, FAA Smoke Density Test (resin data) (9) passed, Toxicity - Draeger Tube (resin data) (10) Flame Spread Index (11) passed, FAR 25.853 (12) passed, FAR 25.853
Flammability	Glow Wire Ignitability Temp, 3.0 mm	800	°C	-	1)	
Flammability	Glow Wire Ignitability Temp, 2.0 mm	775	°C	-	2)	
Flammability	Glow Wire Ignitability Temp, 1.5 mm	775	°C	-	3)	
Flammability	Glow Wire Ignitability Temp, 1.0 mm	775	°C	-	4)	
Flammability (UL94)		V0		-	5)	
Flammability	Glow Wire Flammability Index 960°C passes @	1.0	mm	-	6)	
Flammability	60 sec. Vertical Bunsen Burner test FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+		FAR 25.853	7)	
Flammability	FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+		FAR 25.853	8)	
Flammability	FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+		-	9)	
Flammability	ASTM E 162 (rail)	~15		-	10)	
Flammability	ASTM E 662 (Air/Rail) Ds @ 1.5 min	11-13		-	11)	
Flammability	ASTM E 662 (Air/Rail) Ds @ 4.0 min	20-40		-	12)	

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