

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

### Chemical Designation

PPE (Polyphenylene ether)

### Colour

black opaque

### Density

1.1 g/cm<sup>3</sup>

### 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
Modulus of elasticity (tensile test)	1mm/min	2300	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	57	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	11	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	20	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	96	MPa	DIN EN ISO 178	2) (6) Specimen in 4mm thickness
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 <sup>2</sup>	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	short term	110	°C	-	1)
Service temperature	long term	85	°C	-	
Thermal expansion (CLTE)	23-60°C, longitudinal	8,1	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, longitudinal	8,1	10 <sup>-5</sup> K <sup>-1</sup>	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
Flammability	Glow Wire Flammability Index 960°C passes @	1.0	mm	-	1) (2) passed, FAR 25.853
Flammability	ASTM E 662 (Air/Rail) Ds @ 1.5 min	11-13	-	-	2) (3) ASTM Test Method 60695-2
Flammability	Glow Wire Ignitability Temp, 1.5 mm	775	°C	-	3) (4) passed, FAA Smoke Density Test (resin data)
Flammability	FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+	-	FAR 25.853	4) (5) Units: 1.5 mm
Flammability (UL94)		V0	-	-	6) Flame Spread Index
Flammability	ASTM E 162 (rail)	~15	-	-	7) ASTM Test Method 60695-2
Flammability	Glow Wire Ignitability Temp, 2.0 mm	775	°C	-	8) passed, 3 mm specimen
Flammability	60 sec. Vertical Bunsen Burner test FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+	-	FAR 25.853	9) passed, FAR 25.853
Flammability	ASTM E 662 (Air/Rail) Ds @ 4.0 min	20-40	-	-	10) ASTM Test Method 60695-2
Flammability	Glow Wire Ignitability Temp, 1.0 mm	775	°C	-	11) passed, Toxicity - Draeger Tube (resin data)
Flammability	FAR 25.853 Appx F, Prt 1, (a), 1, (Air)	+	-	-	12) ASTM Test Method 60695-2
Flammability	Glow Wire Ignitability Temp, 3.0 mm	800	°C	-	

This information reflects the current state of our knowledge and is intended only to assist and advise. It is given without obligation or liability. It does not assure or guarantee chemical resistance, quality of products or their suitability in any legally binding way. Values are not minimum or maximum values, but guidelines that can be used for comparative purposes in material selection. They are within the normal range of product properties and do not represent guaranteed property values. Testing under individual application circumstances is always recommended. Data is obtained from extruded shapes material unless otherwise noted. References to FDA compliance refer to the resins from which the products were made unless otherwise noted. All trade and patent rights should be observed. All rights reserved. Data sheet values are subject to periodic review, the most recent update can be found at [www.ensingerplastics.com](http://www.ensingerplastics.com).