

TECHNYL® C 50H2 BLACK 46 N

Polyamide 6

Solvay Engineering Plastics

Message:

TECHNYL® C 50H2 Black 46 N is an unfilled Non-phosphorous and Non-halogenated flame retardant polyamide 6, heat stabilized, for injection moulding. This product, UL94 VO @ 0,4mm, offers excellent moldability together with good stiffness.

General Information				
UL YellowCard		E44716-235530		
Additive		heat stabilizer		
		Flame retardancy		
Features		Phosphorus content, low (to none)		
		Good demoulding performance		
		Halogen-free		
Uses		Electrical/Electronic Applications		
Agency Ratings		EC 1907/2006 (REACH)		
		EN 45545		
		NF F 16-101		
		UL QMFZ2		
RoHS Compliance		RoHS compliance		
Appearance		Black		
		Grey		
		Natural color		
Forms		Particle		
Processing Method		Injection molding		
Resin ID (ISO 1043)		PA6 FR(30)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.16	--	g/cm ³	ISO 1183/A
Water Absorption (23°C, 24 hr)	1.1	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	3500	2000	MPa	ISO 527-2/1A
Tensile Strength				
Yield, 23°C	80.0	--	MPa	ASTM D638
Yield, 23°C	75.0	50.0	MPa	ISO 527-2/1A
Fracture, 23°C	80.0	--	MPa	ASTM D638
Fracture, 23°C	60.0	40.0	MPa	ISO 527-2/1A

Tensile Strain				
Yield, 23°C	3.5	5.0	%	ISO 527-2
Fracture, 23°C	15	--	%	ASTM D638
Fracture, 23°C	25	38	%	ISO 527-2
Flexural Modulus				
23°C	3500	--	MPa	ASTM D790
23°C	3150	2000	MPa	ISO 178
Flexural Strength				
23°C	115	--	MPa	ASTM D790
23°C	200	70.0	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	6.0	15	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	180	--	kJ/m ²	ISO 179/1eU
Notched Izod Impact				
23°C	65	--	J/m	ASTM D256
23°C	3.5	15	kJ/m ²	ISO 180
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	75.0	--	°C	ASTM D648, ISO 75-2/Af
Melting Temperature	222	--	°C	ISO 11357-3
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+15	1.0E+12	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+12	ohms · cm	IEC 60093
Dielectric Strength (2.00 mm)	34	30	kV/mm	IEC 60243-1
Relative Permittivity	3.50	3.90		IEC 60250
Dissipation Factor	0.020	0.060		IEC 60250
Comparative Tracking Index				IEC 60112
Solution a	600	600	V	IEC 60112
Solution B	475	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.40 mm	V-0	--		UL 94
0.8 mm	V-0	--		UL 94
1.6 mm	V-0	--		UL 94
3.2 mm	V-0	--		UL 94
Glow Wire Flammability Index				IEC 60695-2-12
0.8 mm	960	--	°C	IEC 60695-2-12
1.6 mm	960	--	°C	IEC 60695-2-12

3.2 mm	960	--	°C	IEC 60695-2-12
Glow Wire Ignition Temperature				IEC 60695-2-13
0.8 mm	700	--	°C	IEC 60695-2-13
1.6 mm	700	--	°C	IEC 60695-2-13
3.2 mm	700	--	°C	IEC 60695-2-13
Oxygen Index	36	--	%	ISO 4589-2
French Fire Index	F2	--		NF F16-101
French Smoke Index	I2	--		NF F16-101
European Railways Certifications				EN 45545-2
R22	HL3	--		EN 45545-2
R23	HL3	--		EN 45545-2
R25	HL3	--		EN 45545-2
Injection	Dry	Unit		
Drying Temperature	80		°C	
Suggested Max Moisture	0.20		%	
Rear Temperature	230 - 235		°C	
Middle Temperature	235 - 240		°C	
Front Temperature	235 - 245		°C	
Mold Temperature	60 - 90		°C	
Injection instructions				

The material is supplied in airtight bags, ready for use. In case that the virgin material has absorbed moisture, it must be dried with a dehumidified air drying equipment, dew point mini -20°C. Recommended time 2-4h

Injection Advice:

All reinforced flame retardant compounds generate some level of abrasion/corrosion to the steel processing equipment.

These issues can be worsened by using incorrect processing conditions (temperatures, residence time, moisture level ...) during the moulding process.

Therefore, Solvay recommends to use the advised processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retarded compounds, Solvay advises to use a steel containing high chromium & high carbon content (minimum concentration of 16% Chromium) to prevent corrosion and abrasion. For the correct reference of steel associated to flame retardant compounds processing, please refer to your equipment manufacturers. For Mould Temperature, in the case of parts where the surface roughness is required we can recommend a temperature at 120°C. Of course it should be noted that this improvement in the surface appearance may be at the expense of the cycle time.

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