

TECHNYL® A 50H1 BLACK

Polyamide 66
Solvay Engineering Plastics

Message:

TECHNYL® A 50H1 Black is an unreinforced Non-phosphorous and Non-halogenated flame retardant polyamide 66, heat stabilized, for injection moulding. This flame retardant grade, offers excellent filling qualities combined with good stiffness.

General Information				
UL YellowCard		E44716-100890200	E44716-235588	E44716-468972
Additive		heat stabilizer		
		Flame retardancy		
Features		Phosphorus content, low (to none)		
		Good demoulding performance		
		Halogen-free		
Uses		Electrical/Electronic Applications		
		Connector		
Agency Ratings		EC 1907/2006 (REACH)		
		EN 45545		
		NF F 16-101		
		UL QMFZ2		
RoHS Compliance		RoHS compliance		
Appearance		Black		
		Natural color		
Forms		Particle		
Processing Method		Injection molding		
Resin ID (ISO 1043)		PA66 FR(30)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.16	--	g/cm ³	ISO 1183/A
Water Absorption				ISO 62
23°C, 24 hr	0.88	--	%	ISO 62
Equilibrium, 23°C, 50% RH	2.7	--	%	ISO 62
Outdoor Suitability	f1	--		UL 746C
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	3800	1700	MPa	ISO 527-2/1A
Tensile Stress				ISO 527-2/1A

Yield, 23°C	80.0	50.0	MPa	ISO 527-2/1A
Fracture, 23°C	75.0	40.0	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	9.0	> 100	%	ISO 527-2
Flexural Modulus				
23°C	3800	1750	MPa	ASTM D790
23°C	3700	1700	MPa	ISO 178
Flexural Strength				
23°C	120	50.0	MPa	ASTM D790
23°C	130	55.0	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	3.0	--	kJ/m ²	ISO 179/1eA
23°C	3.2	7.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	80	--	kJ/m ²	ISO 179/1eU
23°C	80 kJ/m ²	No Break		ISO 179/1eU
Notched Izod Impact				
23°C	40	--	J/m	ASTM D256
23°C	3.0	--	kJ/m ²	ISO 180
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	237	--	°C	ISO 75-2/Bf
1.8 MPa, not annealed	85.0	--	°C	ISO 75-2/Af
Melting Temperature	263	--	°C	ISO 11357-3
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	3.0E+15	1.0E+14	ohms	IEC 60093
Volume Resistivity	3.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Strength				IEC 60243-1
0.800 mm	33	--	kV/mm	IEC 60243-1
2.00 mm	21	--	kV/mm	IEC 60243-1
Relative Permittivity	3.50	--		IEC 60250
Dissipation Factor	0.017	--		IEC 60250
Comparative Tracking Index (Solution A)	600	--	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
0.40 mm	960	--	°C	IEC 60695-2-13
0.8 mm	960	--	°C	IEC 60695-2-13
1.6 mm	775	--	°C	IEC 60695-2-13
Oxygen Index	33	--	%	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
Injection	Dry	Unit		
Drying Temperature	80		°C	
Suggested Max Moisture	0.20		%	
Rear Temperature	260 - 270		°C	
Middle Temperature	265 - 275		°C	
Front Temperature	265 - 275		°C	
Mold Temperature	60 - 80		°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.

The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design

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