TECHNYL®

TECHNYL® A 50H1 BLACK

TECHNICAL DATA SHEET

Revised: April, 2017

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

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific	• Europe
Additive	• Flame Retardant	• Heat Stabilizer
Key Benefits	• F1 UL Classification • Good Mold Release	• UL 94 V0 at 0.4 mm
Applications	• Connectors • Electrical/Electronic Applications	• Junction box • Terminal blocks
Certification/Compliance	• EC 1907/2006 (REACH) • EN 45545	• NF F 16-101 • UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66 FR(30)	

PROPERTIES

Typical values of properties are for Black grades

Physical	Dry	Conditioned	Unit	Test Method
Water Absorption				ISO 62
24 hr, 23°C	0.88		%	
Equilibrium, 23°C, 50% RH	2.7		%	
Outdoor Suitability	f1			UL 746C
Density	1.16		g/cm³	ISO 1183/A

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	50	MPa	
Break, 23°C	75	40	MPa	
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

Solvay Engineering Plastics
www.solvay.com - www.technyl.com

Tel: 00 800 55 400 600
technyl-emea@solvay.com - Europe, Middle East, Africa
technyl-apac@solvay.com - Asia Pacific
technyl-americas@solvay.com - Americas

SOLVAY
asking more from chemistry®

TECHNYL®

TECHNYL® A 50H1 BLACK

Revised: April, 2017

Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Strength				
23°C	120	50.0	MPa	ASTM D790
23°C	130	55.0	MPa	ISO 178
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	3.0		kJ/m²	
23°C	3.2	7.0	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	80		kJ/m²	
23°C	80	No Break	kJ/m²	
Notched Izod Impact				
23°C	40		J/m	ASTM D256
23°C	3.0		kJ/m²	ISO 180

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	237		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	85		°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
Electric Strength				IEC 60243-1
0.800 mm	33		kV/mm	
2.00 mm	21		kV/mm	
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			
0.8 mm	V-0			
1.6 mm	V-0			
3.2 mm	V-0			
Glow Wire Flammability Index				IEC 60695-2-12
0.8 mm	960		°C	
1.6 mm	960		°C	
3.2 mm	960		°C	
Glow Wire Ignition Temperature				IEC 60695-2-13
0.40 mm	960		°C	
0.8 mm	960		°C	
1.6 mm	775		°C	
Oxygen Index	33		%	ISO 4589-2

Solvay Engineering Plastics
www.solvay.com - www.technyl.com

Tel: 00 800 55 400 600
technyl-emea@solvay.com - Europe, Middle East, Africa
technyl-apac@solvay.com - Asia Pacific
technyl-americas@solvay.com - Americas

SOLVAY
asking more from chemistry®

Flammability	Dry	Conditioned	Unit	Test Method
French Fire Index	F2			NF F16-101
French Smoke Index	I2			NF F16-101

Additional Information	Dry	Unit	Test Method
European Railways Certifications			EN 45545-2
R22	HL3		
R23	HL3		

PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	260 to 270	°C
Middle Temperature	265 to 275	°C
Front Temperature	265 to 275	°C
Mold Temperature	60 to 80	°C

Injection Notes

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 may be magnified by using incorrect processing conditions (temperatures, residence time, moisture level ...) during the moulding process. Therefore, Solvay recommends you adhere to the processing conditions detailed in this technical data sheet. For equipment that comes into contact with molten flame retardant compounds, Solvay advises you to use a steel with high chromium and high carbon content (having a 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. In the case of high requirements on surface quality a mould temperature of up to 120°C can be considered.
- The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design

DISCLAIMER

Solvay Engineering Plastics
www.solvay.com - www.technyl.com

Tel: 00 800 55 400 600
technyl-emea@solvay.com - Europe, Middle East, Africa
technyl-apac@solvay.com - Asia Pacific
technyl-americas@solvay.com - Americas

SAFETY INFORMATION

Detailed information regarding safety are available on the safety data sheet (SDS). SDS is sent with the first material order or available by contacting our customer services

REGULATIONS COMPLIANCE

This product is not intended to be used for the following regulated market: food contact, drinking water, toys, cosmetics or medical devices.

This grade complies with ROHS Directive 2011/65/EU and 2015/863 as amended.

Grades produced or imported in Europe comply with REACH directive 1907/2006/EC as amended.

CUSTOMER SERVICES

Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- Material selection
- Material testing
- Parts design advice, training for design engineers
- Part testing
- Design simulation
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

You can find more information on Solvay Product range on our internet product finder at the following address: http://www.technyl.com

Notes

Typical properties: these are not to be construed as specifications.