TECHNYL®

TECHNYL® A 20 V35 BLACK 25

TECHNICAL DATA SHEET

Revised: March, 2018

TECHNYL® A 20 V35 Black 25 is a Red Phosphorous flame retardant polyamide 66, reinforced with 35% of glass fiber, heat stabilized, for injection moulding. This grade provides robust UL 94 V-0 and a full UL yellow card while offering good mechanical properties. This grade is suitable for moulding insulating parts for electrical devices, and more generally for thin parts under stress.

GENERAL

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific	• Europe
Filler / Reinforcement	• Glass Fiber, 35% Filler by Weight	
Additive	• Flame Retardant	• Heat Stabilizer
Key Benefits	• Glow Wire Resistance • GWFI 960°C at 0.8 mm thickness	• Low Phosphine Emission • UL 94 V0 at 0.8 mm
Applications	• Connectors • Electrical Parts • Electrical protection devices	• Electrical/Electronic Applications • Sensors • White appliances
Certification/Compliance	• EC 1907/2006 (REACH)	• UL QMFZ2
RoHS Compliance	• RoHS Compliant	
Colors Available	• Black	• Natural Color
Forms	• Pellets	
Processing Method	• Injection Molding	
Resin ID (ISO 1043)	• PA66-GF35 FR(52)	

PROPERTIES

Typical values of properties are for Natural grades

Physical	Dry	Conditioned	Unit	Test Method
Molding Shrinkage				ISO 294-4
Across Flow	1.0		%	
Flow	0.25		%	
Water Absorption				ISO 62
24 hr, 23°C	0.60		%	
Equilibrium, 23°C, 50% RH	1.7		%	
Density	1.46		g/cm³	ISO 1183/A

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	12500	8200	MPa	ISO 527-2/1A
Tensile Stress (Break, 23°C)	175	110	MPa	ISO 527-2/1A
Tensile Strain (Break, 23°C)	2.1	3.2	%	ISO 527-2
Flexural Modulus (23°C)	11000	7500	MPa	ISO 178
Flexural Stress (23°C)	260	200	MPa	ISO 178

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Mechanical	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	8.0		kJ/m²	
23°C	10	12	kJ/m²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55		kJ/m²	
23°C	60	70	kJ/m²	
Notched Izod Impact Strength (23°C)	10	12	kJ/m²	ISO 180

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/Af
1.8 MPa, Unannealed	244		°C	
Melting Temperature	263		°C	ISO 11357-3

Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+14	1.0E+13	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+15	ohms·cm	IEC 60093
Electric Strength (0.800 mm)	32		kV/mm	IEC 60243-1
Relative Permittivity	3.40	4.00		IEC 60250
Dissipation Factor	0.020	0.050		IEC 60250
Comparative Tracking Index (Solution A)	400		V	IEC 60112

Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
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 (1.6 mm)	725		°C	IEC 60695-2-13
Oxygen Index	31		%	ISO 4589-2

PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	265 to 275	°C
Middle Temperature	270 to 280	°C
Front Temperature	280 to 290	°C
Mold Temperature	60 to 90	°C

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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

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

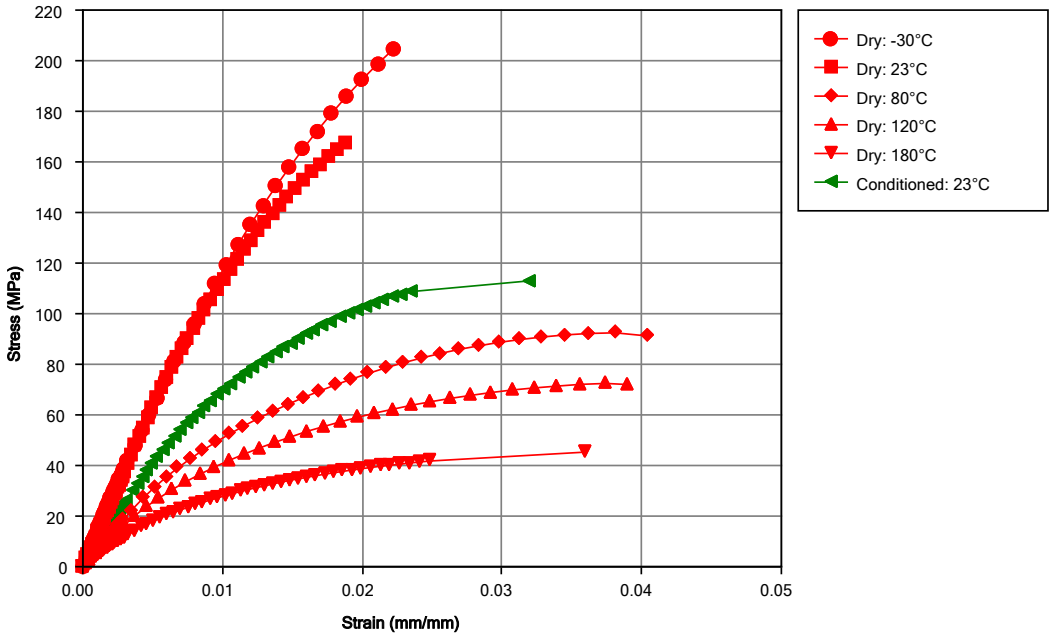
Our customer services are not only concerned with manufacturing and supply of Engineering Plastics products. We are available to assist our customers in finding technical solutions that meet their requirements. Specific support is in particular offered on:

- 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

MULTIPOINT DATA

Isothermal Stress vs. Strain (ISO 11403-1)



Notes

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

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