

# TECHNYL®

## TECHNYL® C 52G3 MZ25 GREY RAL 7541U

TECHNICAL DATA SHEET

Revised: March, 2018

TECHNYL® C 52G3 MZ25 Grey RAL 7541U is a polyamide 6 based on a non-phosphorous and Non-halogenated flame retardant system, reinforced with 25% of mineral filler, heat stabilized, for injection moulding. This grade offers a robust glow wire resistance, combined with enhanced processing behavior suitable for thin wall parts.

### GENERAL

Material Status	• Commercial: Active
Availability	• Asia Pacific
Filler / Reinforcement	• Mineral, 25% Filler by Weight
Additive	• Flame Retardant • Heat Stabilizer
Key Benefits	• Arc Resistance • GWFI 960°C at 0.8 mm thickness • UV Laser Markable • UL 94 V2 at 0.8 mm
Applications	• Circuit Breaker • Electrical protection devices • Electrical/Electronic Applications
Certification/Compliance	• UL QMFZ2
Colors Available	• Black • Grey
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID (ISO 1043)	• PA6-MD25 FR(30)

### PROPERTIES

Typical values of properties are for Grey grades

Physical	Dry	Conditioned	Unit	Test Method
Water Absorption				ISO 62
24 hr, 23°C	1.1		%	
Saturation, 23°C	6.0		%	
Equilibrium, 23°C, 50% RH	2.3		%	
Density	1.37		g/cm <sup>3</sup>	ISO 1183/A
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	6900	2800	MPa	ISO 527-2/1A
Tensile Strength				
Break, 23°C	80		MPa	ASTM D638
Break, 23°C	80	35	MPa	ISO 527-2/1A
Tensile Elongation (Break, 23°C)	3.0		%	ASTM D638 ISO 527-2
Flexural Modulus				
23°C	6700		MPa	ASTM D790
23°C	6900	2900	MPa	ISO 178



Mechanical	Dry	Conditioned	Unit	Test Method
Flexural Strength				
23°C	130		MPa	ASTM D790
23°C	145	55.0	MPa	ISO 178
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	3.0		kJ/m <sup>2</sup>	
23°C	3.0	3.5	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	45		kJ/m <sup>2</sup>	
23°C	45	90	kJ/m <sup>2</sup>	
Notched Izod Impact (23°C)	45		J/m	ASTM D256
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Heat Deflection Temperature				
0.45 MPa, Unannealed	200		°C	ISO 75-2/Bf
1.8 MPa, Unannealed	150		°C	ASTM D648
1.8 MPa, Unannealed	145		°C	ISO 75-2/Af
Melting Temperature	222		°C	ISO 11357-3
<b>Electrical</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Electric Strength (0.800 mm)	37		kV/mm	IEC 60243-1
Comparative Tracking Index (Solution A)	500		V	IEC 60112
<b>Flammability</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Flame Rating				UL 94
0.8 mm	V-2			
1.6 mm	V-2			
3.2 mm	V-2			
Glow Wire Flammability Index (1.6 mm)	960		°C	IEC 60695-2-12

## PROCESSING

Injection	Dry	Unit
Drying Temperature	80	°C
Suggested Max Moisture	0.20	%
Rear Temperature	230 to 235	°C
Middle Temperature	235 to 240	°C
Front Temperature	240 to 250	°C
Mold Temperature	60 to 90	°C



### Injection Notes

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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.
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## DISCLAIMER

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The information contained in this document is given in good faith based on our current knowledge. It is only an indication and it is in no way binding. This information must on no account be used as a substitutive for necessary prior tests which alone can ensure that a product is suitable for a given use. ANY WARRANTY OF PRODUCT PERFORMANCE, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED. Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorizations. Users are requested to check that they are in possession of the latest version of this document, and Solvay is at their disposal to supply any additional information.



## SAFETY INFORMATION

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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

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

## CUSTOMER SERVICES

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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.

