



## TECHNYL A 60G1 V25

### Description

TECHNYL® A 60G1 V25 is a 25% GF reinforced organophosphorous flame retarded grade based on a patented high flow polyamide 66 resin. This product is heat stabilized and provides optimized injection moulding performance.

This product is available in natural, grey & black colors as standard and can be made in other specific colors upon request.

### Key Properties

Outstanding flame retardancy  
Excellent electrical performance  
UL 5VA at 1.6mm  
Excellent all-round mechanical properties

### Benefits

This product offers excellent flame retardancy properties (UL 94, 5VA, GWIT) combined with excellent processing, mechanical and electrical performance.

It can withstand temperatures of 160°C for over 6000 hours and has a UL F1 rating for weatherability resistance.

### Applications

This product is ideally suited for industrial controls, power distribution or appliance applications such as MCBs and contactors. The long term thermal performance of this grade also make it ideal for under-the-bonnet Auto applications.

## Properties

Typical values of properties are for natural grades

	Standards	Unit	Values	
			d.a.m.	Cond.
<b>Physical</b>				
Water absorption(24h at 23°C)	ISO 62	%	0,83	
Density	ISO 1183/A	g/cm3	1,38	
Molding shrinkage Parallel	RHODIA	%	0,50	
Molding shrinkage normal or perpendicular	RHODIA	%	0,90	
Molding Shrinkage Isotropy	RHODIA		0,50	
<b>Mechanical</b>				
Tensile Modulus	ISO 527 Type 1A	MPa	9500	8000
Tensile strength at break	ISO 527 Type 1A	MPa	142	88
	ASTM D-638	MPa	130	
Elongation at break	ISO 527 Type 1A	%	2	2,70
	ASTM D-638	%	2,80	
Flexural modulus	ASTM D-790	MPa	8300	
Flexural maximum stress	ASTM D-790	MPa	195	
Charpy notched impact strength (23 °C)	ISO 179/1eA	kJ/m2	6	8
Charpy unnotched impact strength (23 °C)	ISO 179/1eU	kJ/m2	65	85
Charpy unnotched impact strength (-30 °C)	ISO 179/1fU	kJ/m2	60	
Izod notched impact strength (23 °C)	ISO 180/1A	kJ/m2	6,8	9
	ASTM D256	J/m	95	
<b>Flammability</b>				
Flammability (Thickness: 0,8 mm)	ISO 1210 / UL94		V0	
Flammability (Thickness: 1,6 mm)	ISO 1210 / UL94		V0	
Flammability (Thickness: 3,2 mm)	ISO 1210 / UL94		V0	
Glow Wire Flammability Index (Thickness: 0,8 mm)	ISO 60695-2-12	°C	960	
Glow Wire Flammability Index (Thickness: 1,6 mm)	ISO 60695-2-12	°C	960	
Glow Wire Flammability Index (Thickness: 3,2 mm)	ISO 60695-2-12	°C	960	
Glow Wire Ignition Temperature (Thickness: 1,6 mm)	ISO 60695-2-13	°C	775	
Glow Wire Ignition Temperature (Thickness: 3,2 mm)	ISO 60695-2-13	°C	775	
Limit Oxygen Index	ISO 4589		33	

	Standards	Unit	Values	
			d.a.m.	Cond.
<b>Thermal</b>				
Melting Temperature	ISO 11357	°C	263	
	ASTM D3417	°C	262	
Heat deflection temperature (1,82 MPa)	ASTM D-648	°C	246	
Heat deflection temperature (1,8 MPa)	ISO 75/Af	°C	240	
Heat deflection temperature (0,45 MPa)	ISO 75/Bf	°C	260	
Coef of Linear thermal expansion normal or perpendicular (23°C to 85°C)	ISO 11359	E-5/°C	3	
Melt Mass-Flow Rate (MFR) (275 °C, 0,005 kg)	ISO/FDIS 1133	g/10mn	27	
<b>Electrical</b>				
Comparative tracking index (Sol A)	IEC 60112	V	600	600
Dielectric strength	IEC 60243	kV/mm	30	28
<b>Specific</b>				
Identification code			PA66-GF25 FR(40)	

d.a.m. = dry as moulded

Cond = conditioned

## Disclaimer

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 substitute for necessary prior tests which alone can ensure that a product is suitable for a given use. ANY WARRANTY OF PRODUCT PERFORMANCE, MERCHANDABILITY 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.

## Processing Guide

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.

Recommended Maximum water content: 0,2 %

Drying conditions: 80 °C

### Recommended moulding conditions

Barrel Temperatures:

- feed zone 260 - 275 °C

- compression zone 275 - 280 °C

- mixing zone 280 - 285 °C

Mould temperatures: 60 - 80 °C

### Steel advice for tools

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.

## 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

Grades produced or imported in Europe comply with directive 453/2010/EC, which amends REACH directive 1907/2006/EC

This grade complies with RoHS directive 2002/95/EC

Unless specified, this grade is not suitable for food contact, medical devices or toy applications

## 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
- Processing through different technologies
- Assembly and post-processing technology expertise
- Parts optimization through Computer Aided Design

You can find more information on Solvay/Rhodia Product range on our internet product finder at the following address:

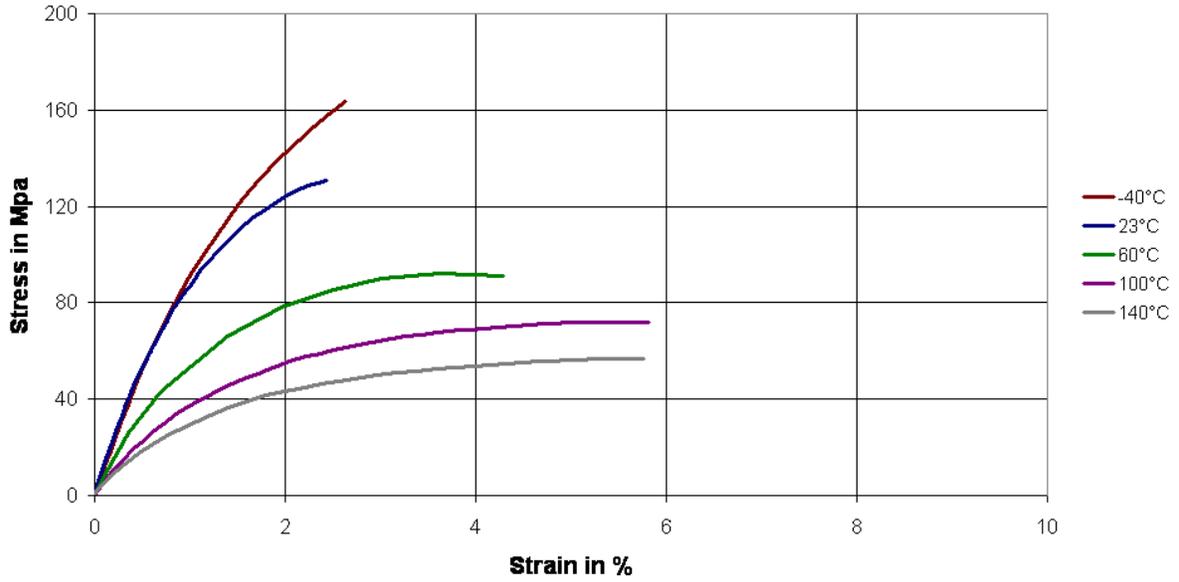
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**Stress-strain**

**Stress-Strain (dry)**  
**Technyl® A 60G1 V25**



## Yellow card

**Component - Plastics** [\[guide info\]](#) E44716

**SOL VAY ENGINEERING PLASTICS GBU**  
 QUARTIER BELLE-ETOILE, AVE RAMBOZ, BOITE POSTALE 64, ST FONS CEDEX 69192 FR

**A 60G1 V25**  
 Polyamide 66 (PA66), glass reinforced, "Technyl", furnished as pellets

Color	Min Thk (mm)	Flame Class	HMI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.4	V-0	0	0	130	65	65
	0.8	V-0	0	0	130	105	120
	1.5	V-0, 5VA	0	0	130	115	130
	3.0	V-0, 5VA	0	0	130	115	130

Comparative Tracking Index (CTI): 0  
 Dielectric Strength (kV/mm): 16  
 High-Voltage Arc Tracking Rate (HVTR): -  
 Dimensional Stability (%): -

Inclined Plane Tracking (IPT): -  
 Volume Resistivity (10<sup>12</sup> ohm-cm): -  
 High Volt, Low Current Arc Resis (D495): -

NOTE - Materials designated "Technyl" may be prefixed by the letters "TY".

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2004-11-29  
 Last Revised: 2014-01-30 © 2015 UL LLC



### IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10, IEC 60695-11-20	Class (color)	0.4	V-0 (ALL)
			0.8	V-0 (ALL)
			1.5	V-0, 5VA (ALL)
			3.0	V-0, 5VA (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.4	960
			0.8	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.4	750
			0.8	750
			1.5	775
			3.0	800
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 6256	kJ/m <sup>2</sup>	-	-
ISO IZOD Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

## Notes for UL

For UL, the CTI is determined with a +/- 25V tolerance.