



TECHNYLSTAR S 60G1 V30

Description

TECHNYLSTAR™ S 60G1 V30 is a reinforced 30% GF organophosphorous flame retarded grade based on a patented high flow polyamide 6 resin (TechnylStar). 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

UL94 V0 at 0.4mm
Excellent all-round mechanical properties
Excellent electrical performance
Best in class processing

Benefits

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

Applications

This product is ideally suited for power distribution, industrial control and appliance applications such as MCBs and contactors, as well as being able to be used in many varied thin wall applications where its high flow polymer base enables it to achieve a UL94 V-0 rating down to a 0.4mm wall thickness.

Properties

Typical values of properties are for natural grades

	Standards	Unit	Values	
			d.a.m.	Cond.
Physical				
Water absorption(24h at 23°C)	ISO 62	%	0,90	
Density	ISO 1183/A	g/cm ³	1,42	
Molding shrinkage Parallel	RHODIA	%	0,40	
Molding shrinkage normal or perpendicular	RHODIA	%	0,70	
Molding Shrinkage Isotropy	RHODIA		0,57	
Mechanical				
Tensile Modulus	ISO 527 Type 1A	MPa	11800	8500
Tensile strength at break	ISO 527 Type 1A	MPa	147	97
	ASTM D-638	MPa	155	
Elongation at break	ISO 527 Type 1A	%	2,40	5,10
	ASTM D-638	%	2,50	
Flexural modulus	ISO 178	MPa	10700	7100
	ASTM D-790	MPa	10500	
Flexural maximum stress	ISO 178	MPa	243	175
	ASTM D-790	MPa	240	
Charpy notched impact strength (23 °C)	ISO 179/1eA	kJ/m ²	9,6	12,5
Charpy unnotched impact strength (23 °C)	ISO 179/1eU	kJ/m ²	60	70
Izod notched impact strength (23 °C)	ISO 180/1A	kJ/m ²	10	12
	ASTM D256	J/m	120	
Izod unnotched impact strength	ISO 180/1U	kJ/m ²	54	63
Flammability				
Flammability (Thickness: 0,38 mm)	ISO 1210 / UL94		V0	
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: 0,8 mm)	ISO 60695-2-13	°C	775	
Glow Wire Ignition Temperature (Thickness: 1,6 mm)	ISO 60695-2-13	°C	800	
Limit Oxygen Index	ISO 4589		35	
Thermal				
Melting Temperature	ISO 11357	°C	222	
Heat deflection temperature (1,8 MPa)	ISO 75/Af	°C	205	
Heat deflection temperature (1,82 MPa)	ASTM D-648	°C	205	

	Standards	Unit	Values	
			d.a.m.	Cond.
Electrical				
Comparative tracking index (Sol A)	IEC 60112	V	600	600
Dielectric strength	IEC 60243	kV/mm	25	23
Dissipation factor	IEC 60250			0,080
Relative permittivity	IEC 60250		2,90	4,35
Surface resistivity	IEC 60093	Ohm	1,1E 14	

Specific

Identification code

PA6-GF30 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 230 - 235 °C

- compression zone 235 - 240 °C

- mixing zone 240 - 245 °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:

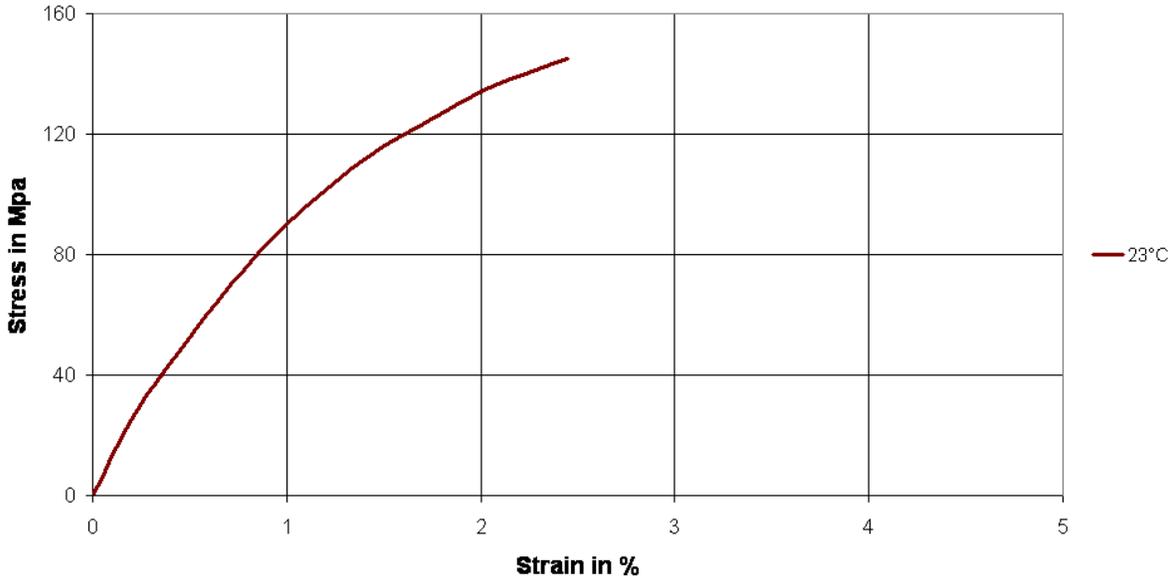
http://www.rhodia.com/en/markets_and_products/product_finder

or

<http://www.solvay.com/en/markets-and-products/featured-products/technyl.html>

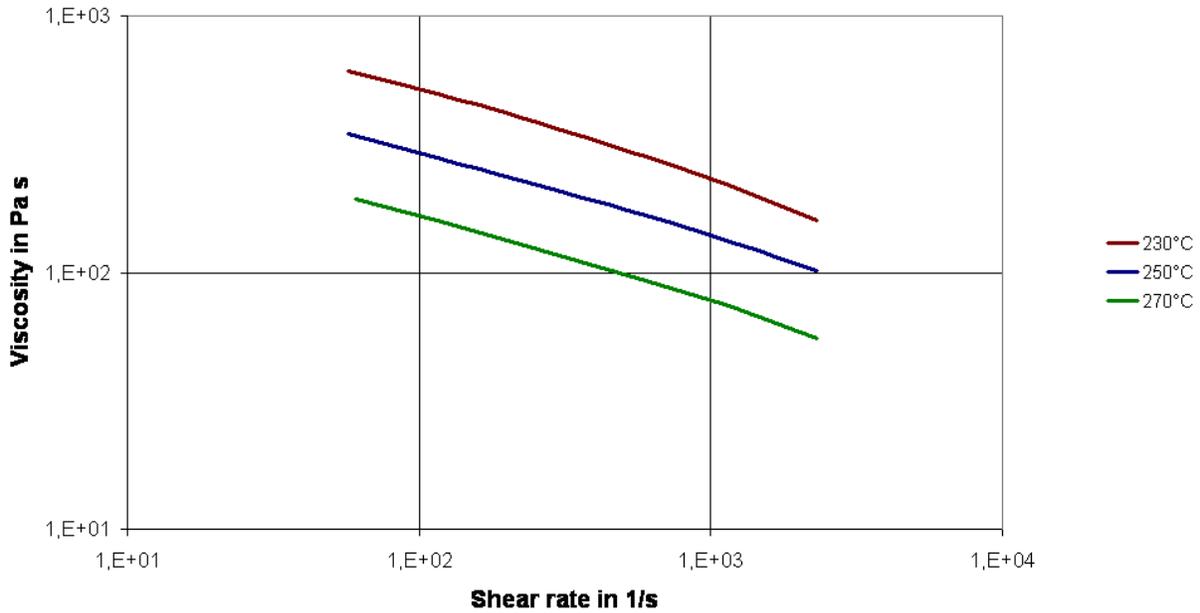
Stress-strain

Stress-Strain (dry)
Technylstar S 60G1 V30



Viscosity-shear rate

Viscosity-shear rate
Technylstar S 60G1 V30



Yellow card

Component - Plastics [guide info]					E44716		
SOLVAY ENGINEERING PLASTICS GBU							
QUARTIER BELLE-ETOILE, AVE RAMBOZ, BOITE POSTALE 64, ST FONS CEDEX 69192 FR							
S 60G1 V30 (ipt1)							
Polyamide 6 (PA6), glass reinforced, "Technyl Star", furnished as pellets							
	Min Thk	Flame			RTI	RTI	RTI
Color	(mm)	Class	HWI	HAI	Elec	Imp	Str
ALL	0.40	V-0	3	0	130	115	130
	0.75	V-0	3	0	130	115	130
	1.5	V-0	0	0	130	115	130
	3.0	V-0	0	0	130	115	130
NC, BK	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				Inclined Plane Tracking (IPT): 60 min at 1kV			
Dielectric Strength (kV/mm): 21				Volume Resistivity (10 ^x ohm-cm): -			
High-Voltage Arc Tracking Rate (HVTR): 1				High Volt, Low Current Arc Resis (D495): -			
Dimensional Stability (%): -							
(ipt1) - Properties include Inclined Plane Tracking per UL746A, average time to track at 1500 V is 25 minutes							
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: 2002-03-05				© 2015 UL LLC			
Last Revised: 2013-12-12							

IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10, IEC 60695-11-20	Class (color)	0.40	V-0 (ALL)
			0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
			1.5	V-0, 5VA (NC, BK)
			3.0	V-0, 5VA (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.75	950
			1.5	960
			3.0	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.75	800
			1.5	800
			3.0	825
			1.5	800
			3.0	825
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 8256	kJ/m ²	-	-
ISO Izod Impact	ISO 180	kJ/m ²	-	-
ISO Charpy Impact	ISO 179-2	kJ/m ²	-	-