Engineering Plastics'
TECHNYL®

Product Data Sheet

30.04.2015

TECHNYL A 50H1

Description

TECHNYL® A 50H1 is an unreinforced flame retardant polyamide 66, for injection molding. This product is available in natural, black and in other colours upon request.

Key Properties

UL94 V0 at 0.4mm
GWFI 960°C
Excellent filling qualities

Benefits

This phosphorus and halogen free flame retardant grade, offers excellent filling qualities combined with good stiffness.

Applications

It is particularly suitable for molding insulating parts for electrical components:
- Components for electrical connections: junction blocks, terminal blocks, connectors.

More info : www.rhodia.com Tel: 00 800 55 400 600
Contact : engineeringplastics-business@eu.rhodia.com

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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	%	0,88	
Density	ISO 1183/A	g/cm3	1,16	
Mechanical				
Tensile Modulus	ISO 527 Type 1A	MPa	3800	2200
Tensile strength at yield	ISO 527 Type 1A	MPa	86	53
Tensile strength at break	ISO 527 Type 1A	MPa	78	46
Elongation at yield	ISO 527 Type 1A	%	4,20	
Elongation at break	ISO 527 Type 1A	%	10	
Flexural modulus	ISO 178	MPa	3700	1710
Flexural maximum stress	ISO 178	MPa	137	61
Charpy notched impact strength (23 °C)	ISO 179/1eA	kJ/m2	3,2	
Charpy unnotched impact strength (23 °C)	ISO 179/1eU	kJ/m2	80	NB
Izod notched impact strength (23 °C)	ISO 180/1A	kJ/m2	3	
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	960	
Glow Wire Ignition Temperature (Thickness: 1,5 mm)		°C	775	
Limit Oxygen Index	ISO 4589		33	
Fire and Smoke index	NF F 16 101		I2 / F2	
Thermal				
Melting Temperature	ISO 11357	°C	263	
Heat deflection temperature (1,8 MPa)	ISO 75/Af	°C	85	
Heat deflection temperature (0,45 MPa)	ISO 75/Bf	°C	237	
Electrical				
Comparative tracking index (Sol A)	IEC 60112	V	600	
Specific				
Identification code			PA66 FR(30)	

	Standards	Unit	Values	
			d.a.m.	Cond.

d.a.m. = dry as moulded
Cond = conditioned

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 - 270 °C
- compression zone 265 - 275 °C
- mixing zone 265 - 275 °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.

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

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

Yellow card

Component - Plastics [guide info] **E44716**

SOLVAY ENGINEERING PLASTICS GBU

QUARTIER BELLE-ETOILE, AVE RAMBOZ, BOITE POSTALE 64, ST FONS CEDEX 69192 FR

A 50H1(r3)(f1)

Polyamide 66 (PA66), unfilled, "Technyl", furnished as pellets

	Min Thk	Flame			RTI	RTI	RTI
Color	(mm)	Class	HWI	HAI	Elec	Imp	Str
ALL	0.75	V-0	2	3	130	105	120
	1.5	V-0	2	3	130	105	120
	3.0	V-0	2	3	130	105	120

Comparative Tracking Index (CTI):	0	Inclined Plane Tracking (IPT):	-
Dielectric Strength (kV/mm):	-	Volume Resistivity (10^x ohm-cm):	-
High-Voltage Arc Tracking Rate (HVTR):	0	High Volt, Low Current Arc Resis (D495):	6
Dimensional Stability (%):	-		

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

Report Date: 2004-12-14
Last Revised: 2013-04-05

A 50H1 (r3)(f2)

Polyamide 66 (PA66), unfilled, "Technyl", furnished as pellets

	Min Thk	Flame			RTI	RTI	RTI
Color	(mm)	Class	HWI	HAI	Elec	Imp	Str
ALL	0.4	V-0	4	3	130	105	120
	0.75	V-0	2	3	130	105	120
	1.5	V-0	2	3	130	105	120
	3.0	V-0	2	3	130	105	120

Comparative Tracking Index (CTI):	0	Inclined Plane Tracking (IPT):	-
Dielectric Strength (kV/mm):	-	Volume Resistivity (10^x ohm-cm):	-
High-Voltage Arc Tracking Rate (HVTR):	0	High Volt, Low Current Arc Resis (D495):	6
Dimensional Stability (%):	-		

(f2) - Subjected to one or more of the following tests: Ultraviolet Light, Water Exposure or Immersion in accordance with UL 746C, where the acceptability for outdoor use is to be determined by UL.

(r3) - Virgin and regrind up to 50% by weight inclusive have the same basic material characteristics

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: 2004-12-14
Last Revised: 2013-12-19

IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.4	V-0 (ALL)
			0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.4	960
			0.75	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.4	960
			0.75	960
			1.5	775
			3.0	700
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	3.0	190
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	-	-