Technical data sheet

SUSTAMID® 46

Product characteristics

- High continuous service temperature
- Excellent sliding properties
- High heat deflection temperature

Typical fields of application

- Mechanical engineering
- Electrical industry
- Vehicle construction

	Test method	Unit	Value
General properties			
Density	DIN EN ISO 1183-1	g/cm³	1,18
Water absorption	DIN EN ISO 62	%	3,7
Flammability (Thickness 3 mm / 6 mm)	UL 94		HB / HB
Mechanical properties			
Yield stress	DIN EN ISO 527	MPa	95
Elongation at break	DIN EN ISO 527	%	30
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3100
Notched impact strength (charpy)	DIN EN ISO 179	kJ/m²	6,0
Ball indentation hardness	DIN EN ISO 2039-1	MPa	168
Shore hardness	DIN EN ISO 868	scale D	84
Thermal properties			
Melting temperature	ISO 11357-3	°C	295
Thermal conductivity	DIN 52612-1	W / (m * K)	0,30
Thermal capacity	DIN 52612	kJ / (kg * K)	-
Coefficient of linear thermal expansion	DIN 53752	$10^{-6}K^{-1}$	80
Service temperature, long term	Average	°C	-40 ... 135
Service temperature, short term (max.)	Average	°C	200
Heat deflection temperature	DIN EN ISO 75, method A	°C	160
Electrical properties			
Dielectric constant	IEC 60250		3,8
Dielectric dissipation factor (50Hz)	IEC 60250		0,13
Volume resistivity	IEC 60093	Ω *cm	10^{15}
Surface resistivity	IEC 60093	Ω	10^{16}
Comparative tracking index	IEC 60112		400
Dielectric strength	IEC 60243	kV/mm	22

The following applies to Polyamides: Under the influence of moisture absorption, the mechanical properties change. The material becomes tougher and more resistant to impact, the modulus of elasticity declines. Depending on the environmental atmosphere, the temperature and the period of moisture absorption, only the surface layer is affected by alterations of property to a certain depth. On thick-walled parts, the center area remains unaffected. The short-term maximum application temperature only applies to very low mechanical stress for a few hours. The long-term maximum application temperature is based on the thermal ageing of plastics by oxidation, resulting in a decrease of the mechanical properties. This applies to an exposure to temperatures for at least 5.000 hours causing a 50% loss of the tensile strength from the original value (measured at room temperature). This value says nothing about the mechanical strength of the material at high application temperatures. In case of thick-walled parts, only the surface layer is affected by oxidation from high temperatures. With the addition of antioxidants, a better protection of the surface layer is achieved. In any case, the center area of the material remains unaffected. The minimum application temperature is basically influenced by possible stress factors like impact and/or shock under application. The values stated refer to an minimum degree of impact stress. The electrical properties as stated result from measurements on natural, dry material. With other colours (in particular black) or saturated material, there may be clear differences in the electrical properties. The data stated above are average values ascertained by statistical tests on a regular basis. They are in accordance with DIN EN 15860. They serve as information about our products and are presented as a guide to choose from our range of materials. This, however, does not include an assurance of specific properties or the suitability for particular application purposes that are legally binding. Since the properties also depend on the dimension of the semi-finished products and the degree of crystallization (e.g. nucleating by pigments), the actual values of the properties of a particular product may differ from the indicated values.

Date: 06/11/2014

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