Technical Data Sheet

SustaPEI natural

PEI

Typical characteristics

- High stiffness even at high temperatures
- Low smoke development
- Good resistance against high energy radiation

Typical industries

- Electrical Industry
- Electronics
- Aerospace
- Semiconductor Industry
- Semiconductor Front-End applications
- Semiconductor Wafer Handling
- Semiconductor Back-End applications
- Semiconductor High and low temperature

	Test method	Unit	Guideline value
General properties			
Density	DIN EN ISO 1183-1	g / cm^3	1,27
Water absorption	DIN EN ISO 62	%	0,5
Flammability (Thickness 3 mm / 6 mm)	UL 94		V0 / V0
Mechanical properties			
Yield stress	DIN EN ISO 527	MPa	110
Elongation at break	DIN EN ISO 527	%	12
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3100
Notched impact strength	DIN EN ISO 179	kJ / m^2	4
Shore hardness	DIN EN ISO 868	scale D	86
Thermal properties			
Thermal conductivity	DIN 52612-1	W / (m * K)	0,24
Thermal capacity	DIN 52612	kJ / (kg * K)	1,10
Coefficient of linear thermal expansion	DIN 53752	10^{-6} / K	45
Service temperature, long term	Average	°C	-50 ... 170
Service temperature, short term (max.)	Average	°C	210

	Test method	Unit	Guideline value
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	200
Electrical properties			
Dielectric constant	IEC 60250		3,2
Dielectric dissipation factor (50 Hz)	IEC 60250		0,0015
Volume resistivity	DIN EN 62631-3-1	Ω * cm	10^{15}
Surface resistivity	DIN EN 62631-3-2	Ω	10^{15}
Comparative tracking index	IEC 60112		150
Dielectric strength	IEC 60243	kV / mm	30

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.