Technical Data Sheet

EtroX® I CM UHT natural

PI

Typical characteristics

- Good thermo-oxidative stability (use up to 450°C)
- high dimensional stability under heat
- Heat resistant
- Low creep tendency
- Low moisture absorption

Typical industries

- Electronics
- Semiconductor Back-End applications
- Semiconductor Wafer Handling
- Semiconductor High and low temperature
- Semiconductor Dicing
- Vehicle Construction
- Mechanical Engineering Industry

	Test method	Unit	Guideline value
General properties			
Density	DIN EN ISO 1183-1	g / cm³	1,43
Water absorption	DIN EN ISO 62 (23°C / 24h)	%	0,06
Water absorption	DIN EN ISO 62 (23°C / 48h)	%	0,1
Water absorption	DIN EN ISO 62 (23°C / 3 Weeks)	%	0,4
Mechanical properties			
Elongation at break	DIN EN ISO 527	%	4
Tensile modulus of elasticity	DIN EN ISO 527	MPa	4800
Tensile strength	DIN EN ISO 527	MPa	142
Impact strength	DIN EN ISO 179	kJ / m²	40
Notched impact strength	DIN EN ISO 179	kJ / m²	3
Shore hardness	DIN EN ISO 868	scale D	90
Flexural Modulus	ASTM D790	ksi	750
Elastic modulus of compression	DIN EN ISO 604	MPa	4000
Thermal properties			
Glass transition temperature	ISO 11357-3	°C	270
Service temperature, short term (max.)	Average	°C	450

ri-inquiry@roechling.com • www.roechling.com/industrial/materials

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	Test method	Unit	Guideline value
Temp. of deflection under load, 1.80 MPa	ISO 75-1/-2	°C	265
Temp. of deflection under load, 0.45 MPa	ISO 75-1/-2	°C	304
Electrical properties			
Volume resistivity	DIN EN 62631-3-1	Ω * cm	$>10^{11}$
Dielectric constant @ 1MHz	DIN EN IEC 62631-2-1		3,3

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.

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INTEGRATED MANAGEMENT SYSTEM