

TECASINT 1031

Chemical Designation:	Polyimide
DIN-Abbreviation:	PI CS 40
Colours, fillers:	black, 40% Grafit

Main features

- | | |
|---------------------------------------|---|
| high thermal and mechanical capacity | very creep resistant |
| good radiation-resistance | good sliding properties |
| broad chemical compatibility | low thermal expansion |
| easily machined to tight tolerances | low outgassing |
| flame retardant according to UL94 V-0 | sensitive to hydrolysis in higher thermal range |

Applications

- | | |
|----------------------------------|----------------------|
| mechanical engineering | automotive industry |
| materials handling equipment | hot glass technology |
| aircraft an aerospace industries | cryogenics |
| precision engineering | textile industry |

Preferred Fields

Valve seating, piston rings, chain guides, gripper finger for hot glass, bearings

Properties

Material data sheet

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Mechanical	data	temperature	unit	test method
Tensile strength	65	23°C	MPa	EN ISO 527
Tensile elongation at break	2,2	23°C	%	EN ISO 527
Tensile modulus	-	23°C	MPa	EN ISO 527
Flexural strength	88	23°C	MPa	EN ISO 178
Flexural elongation	1,4	23°C	%	EN ISO 178
Flexural modulus	-	23°C	MPa	EN ISO 178
Flexural modulus	-	250°C	MPa	EN ISO 178
Flexural modulus	-	300°C	MPa	EN ISO 178
Compressive strength	180	23°C	MPa	EN ISO 604
Compression at break	-	23°C	%	EN ISO 604
Compressive stress at 10 % strain	-	23°C	MPa	EN ISO 604
Compressive modulus	-	23°C	MPa	EN ISO 604

Material Data Sheet

status: February 2009

Mechanical	data	temperature	unit	test method
Notch impact strength	-	23°C	KJ / m ²	ASTM D256 Izod A
Impact strength	-	23°C	KJ / m ²	EN ISO 179 Charpy
Hardness Shore D	85	23°C	D	DIN 53 505

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Thermal	data	temperature	unit	test method
Heat Deflection Temperature 1,85 MPa	-	-	° C	DIN 53 461
Coefficient of thermal Expansion	31 /-*	50 – 200°C	10 ⁻⁶ .K ⁻¹	DIN 53 752
Coefficient of thermal Expansion	-	200 – 300°C	10 ⁻⁶ .K ⁻¹	DIN 53 752
Thermal conductivity	-	40°C	W/(K · m)	ISO 8302
Specific heat	-	-	J.g ⁻¹ .K ⁻¹	
Glass transition temperature	330	-	°C	DMTA

*Thermal Expansion XY / Z axis

Material data sheet

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Electrical	data	temperature	unit	test method
Electric strength DC	-	23°C	kV.mm ⁻¹	ISO 60243-1
Dielectric constant 100 Hz	-	23°C	-	IEC 60250
Dielectric constant 1kHz	-	23°C	-	IEC 60250
Dielectric constant 10kHz	-	23°C	-	IEC 60250
Dielectric constant 100kHz	-	23°C	-	IEC 60250
Dielectric constant 26,5 – 40 GHz	-	23°C	-	IEC 60250
Dissipation factor 50 Hz	-	23°C	-	DIN 53 483
Dissipation factor 27 MHz	-	23°C	-	DIN 53 483
Specific Volume Resistance	-	23°C	Ω *cm	IEC 60093
Surface Resistivity	< 10 ³	23°C	Ω	IEC 60093

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Miscellaneous	data	temperature	unit	test method
Density	1,57	23°C	g / cm ³	DIN 53 479
Water absorption, 24 hours	0,42	23°C	%	EN ISO 62
Water absorption, 24 hours	-	80°C	%	EN ISO 62
Water absorption, 3 week (saturation)	-	80°C	%	EN ISO 62

Testing of semi-finished products

The above information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed. Unless otherwise stated, these values represent averages taken from compression moulded samples. We reserve the right to make technical alterations.