

TECASINT 1011

Chemical Designation: Polyimide
 DIN-Abbreviation: PI
 Colours, fillers: black

Main features

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

Applications

- | cryogenics
- | electrical engineering
- | precision engineering
- | mechanical engineering
- | nuclear and vacuum technology
- | Semiconductor technology
- | electronics
- | aircraft an aerospace industries
- | food technology

Preferred Fields

Insulators, switch parts, valve faces, friction rings, chain guides, gripper finger for hot glass, sole plate, wear parts

Properties

Material data sheet

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Mechanical	data	temperature	unit	test method
Tensile strength	116	23°C	MPa	EN ISO 527
Tensile elongation at break	9,0	23°C	%	EN ISO 527
Tensile modulus	4000	23°C	MPa	EN ISO 527
Flexural strength	210	23°C	MPa	EN ISO 178
Flexural elongation	7,3	23°C	%	EN ISO 178
Flexural modulus	3448	23°C	MPa	EN ISO 178
Flexural modulus	-	250°C	MPa	EN ISO 178
Flexural modulus	-	300°C	MPa	EN ISO 178
Compressive strength	556	23°C	MPa	EN ISO 604
Compression at break	45	23°C	%	EN ISO 604
Compressive stress at 10 % strain	240	23°C	MPa	EN ISO 604
Compressive modulus	4000	23°C	MPa	EN ISO 604

Material Data Sheet

status: February 2009

Mechanical	data	temperature	unit	test method
Notch impact strength	3,3	23°C	KJ / m ²	EN ISO 179 Charpy
Impact strength	75,8	23°C	KJ / m ²	EN ISO 179 Charpy
Hardness Shore D	90	23°C	D	DIN 53 505

Material data sheet

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Thermal	data	temperature	unit	test method
Heat Deflection Temperature 1,85 MPa	300	-	° C	DIN 53 461
Coefficient of thermal Expansion	43	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	0,22	40°C	W/(K · m)	ISO 8302
Specific heat	1,04	-	J.g ⁻¹ .K ⁻¹	
Glass transition temperature	350	-	°C	DMTA

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Electrical	data	temperature	unit	test method
Electric strength DC	20	23°C	kV.mm ⁻¹	ISO 60243-1
Dielectric constant 100 Hz	3,5	23°C	-	IEC 60250
Dielectric constant 1kHz	3,1	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	1.10 ⁻³	23°C	-	DIN 53 483
Dissipation factor 27 MHz	3.10 ⁻³	23°C	-	DIN 53 483
Specific Volume Resistance	10 ¹⁷	23°C	Ω *cm	IEC 60093
Surface Resistivity	10 ¹⁶	23°C	Ω	IEC 60093

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Miscellaneous	data	temperature	unit	test method
Density	1,34	23°C	g / cm ³	DIN 53 479
Water absorption, 24 hours	1,08	23°C	%	EN ISO 62
Water absorption, 24 hours	3,29	80°C	%	EN ISO 62
Water absorption, 3 week (saturation)	5,56	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.