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TIVAR® H.O.T

Semi-crystalline plastic, IVAR® H.O.T (Higher Operating Temperature) has been formulated to maintain its performance when exposed to a wide range of temperatures (80° - 135° C depending on the load). Special additives reduce the oxidation rate of this material at high temperatures, consequently slowing down its degradation and extending its life time. It is suitable for conveyor systems or other equipment which are often exposed to chemical washes (meat processing and packaging industries), spiral conveyors in the baking industry or wear profiles for drying systems.









MAIN CHARACTERISTICS

- Increased resistance over a wide range of temperatures (80° C to 135° C depending on load)
- Contains additives that inhibit oxidation
- Low coefficient of friction
- Good resistance to corrosion and moisture
- High resistance to abrasion and wear
- Very good chemical resistance

APPLICATIONS

- Guide skids and wear guides
- Worm screws
- Segments, stars, curves and profiles
- Strips and wear plates on conveyors and drying units
- Coatings for feeders of raw materials in the food and fertilizer industry
- Seals
- Chain guides
- Conveyor components

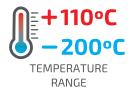
















MELTING TEMPERATURE (DSC, 10°C/MIN) THERMAL CONDUCTIVITY AT 23°C COEFFICIENT OF LINEAR THERMAL EXPANSION BETWEEN 23-100°C MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODS³ CONTINUOUSLY: FOR 20.000H° MINIMUM SERVICE TEMPERATURE5 CONTINUOUSLY: FOR 20.000H° METHOD A: 1.8 MPa METHOD A: 1.8 MPa MISO 75-1/-2 "OC 42 VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 "C 80 FLAMMABILITY6 "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) TENSILE STRESS AT YIELD8 TENSILE MODULUS OF ELASTICITY10 COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN10 CHARPY IMPACT STRENGTH - NOTCHED SHORT AND					
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MOLECULAR WEIGHT WATER ABSORPTION AT SATURATION IN WATER OF 23°C¹ THERMAL PROPERTIES² MELTING TEMPERATURE (DSC, 10°C/MIN) ISO 11357-1/-3 °C 135 THERMAL CONDUCTIVITY AT 23°C - W/(K.m) 0.40 COEFFICIENT OF LINEAR THERMAL EXPANSION BETWEEN 23-100°C MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODS³ - °C 135 CONTINUOUSLY: FOR 20.000H* FOR SHORT PERIODS - °C 110 MINIMUM SERVICE TEMPERATURE S - °C -200 TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa METHOD A: 1.8 MPa 150 75-1/-2 °C 42 VICAT SOFTENING TEMPERATURE - VST/B50 FLAMMABILITY® "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) - HB MECHANICAL PROPERTIES AT 23°C′ TENSION TEST® TENSILE STRESS AT YIELD® TENSILE STRESS AT YIELD® TENSILE STRESS AT STEEDS TENSILE STRESS AT 1/2/5% NOMINAL STRAIN® COMPRESSION TEST® COMPRESSION TEST® COMPRESSION TEST® COMPRESSION TEST® COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN® CHARPY IMPACT STRENGTH - UNNOTCHED CHARPY IMPACT STRENGTH - NOTCHED CHARPY IMPACT STRENGTH	COLOR			-	WHITE
WATER ABSORPTION AT SATURATION IN WATER OF 23°C¹ - 96 < 0.1 THERMAL PROPERTIES¹ MELTING TEMPERATURE (DSC, 10°C/MIN)	DENSITY		ISO 1183-1	g/cm³	0.93
THERMAL PROPERTIES' MELTING TEMPERATURE (DSC, 10°C/MIN) ISO 11357-1/-3 © C 135 THERMAL CONDUCTIVITY AT 23°C COEFFICIENT OF LINEAR THERMAL EXPANSION BETWEEN 23-100°C MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODS' CONTINUOUSLY: FOR 20.000H* MINIMUM SERVICE TEMPERATURE'S CONTINUOUSLY: FOR 20.000H* MINIMUM SERVICE TEMPERATURE'S CONTINUOUSLY: FOR 20.000H* MINIMUM SERVICE TEMPERATURE'S CONTINUOUSLY: FOR 20.000H* METHOD A: 1.8 MPa ISO 75-1/-2 © C 42 VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 © C 80 FLAMMABILITY'S "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) "OXYGEN INDEX" TENSION TEST'S TENSILE STRESS AT YIELD'S TENSILE STRESS AT YIELD'S TENSILE STRAIN AT BREAK TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa 700 COMPRESSIVE STRESS AT 1/2/59% NOMINAL STRAIN'S ISO 507-1/-2 MPa 700 CHARPY IMPACT STRENGTH - UNNOTCHED CHARPY IMPACT STRENGTH - NOTCHED CHARPY IMPA	MOLECULAR WEIGHT		-	10 ⁶ g/mol	9
MELTING TEMPERATURE (DSC, 10°C/MIN) THERMAL CONDUCTIVITY AT 23°C COEFFICIENT OF LINEAR THERMAL EXPANSION BETWEEN 23-100°C MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODS³ CONTINUOUSLY: FOR 20.000H° MINIMUM SERVICE TEMPERATURE5 CONTINUOUSLY: FOR 20.000H° METHOD A: 1.8 MPa METHOD A: 1.8 MPa MISO 75-1/-2 "OC 42 VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 "C 80 FLAMMABILITY6 "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) TENSILE STRESS AT YIELD8 TENSILE MODULUS OF ELASTICITY10 COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN10 CHARPY IMPACT STRENGTH - NOTCHED SHORT AND	WATER ABSORPTION AT SATURATION IN WATER OF 23°C1		-	%	< 0.1
THERMAL CONDUCTIVITY AT 23°C COEFFICIENT OF LINEAR THERMAL EXPANSION BETWEEN 23-100°C MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODOS ³ CONTINUOUSLY: FOR 20.000H° MINIMUM SERVICE TEMPERATURES CONTINUOUSLY: FOR 20.000H° METHOD A: 1.8 MPa METHOD A: 1.8 MP					
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MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR FOR SHORT PERIODS ² CONTINUOUSLY: FOR 20.000H ⁴ MINIMUM SERVICE TEMPERATURE ⁵ CONTINUOUSLY: FOR 20.000H ⁴ MINIMUM SERVICE TEMPERATURE ⁵ - °C -200 TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa ISO 75-1/-2 °C 42 VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 °C 80 FLAMMABILITY ⁶ "OXYGEN INDEX" ACCORDING TO U.94 (6MM DE ESPESSURA) ACCORDING TO U.94 (6MM DE ESPESSURA) TENSILE STRESS AT YIELD ⁹ TENSILE STRESS AT YIELD ⁹ TENSILE STRESS AT SERSAL ISO 527-1/-2 MPa TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa 700 COMPRESSION TEST ¹¹ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - NOTCHED	COEFFICIENT OF LINEAR THERMAL EXPANSION				
FOR SHORT PERIODS ³ CONTINUOUSLY: FOR 20.000H ⁴ CONTINUOUSLY: FOR 20.000H ⁴ MINIMUM SERVICE TEMPERATURE ⁵ - °C -200 TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa ISO 75-1/-2 °C 42 VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 CONTINUOUSLY: "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) - HB MECHANICAL PROPERTIES AT 23°C TENSILE STRESS AT VIELD ⁹ TENSILE STRESS AT VIELD ⁹ TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa TENSILE MODULUS OF ELASTICITY ¹⁰ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - NOTCHED CHARPY IMPACT STRENGTH - NOTCHED (BOUBLE 14° NOTCH) ¹³ SHORE HARDNESS D (15 S) ¹⁴ SHORE HARDNESS D (15 S) ¹⁴ SHORE HARDNESS D (15 S) ¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH ¹⁵ VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10 ¹² RELATIVE PERMITTIVITY ε, : A 100HZ RELATIVE PERMITTIVITY ε, : A 100HZ RELATIVE PERMITTIVITY ε, : A 10HZ DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ	BETWEEN 23-100°C		-	M/(m.K)	200 x 10 ⁻⁶
CONTINUOUSLY: FOR 20.000H ^a MINIMUM SERVICE TEMPERATURE ⁵ - °C -200 TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa ISO 75-1/-2 °C 42 VICAT SOFTENING TEMPERATURE - VST/B50 FLAMMABILITY ⁶ "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) ACCORDING TO UL94 (6MM DE ESPESSURA) TENSION TEST ⁸ TENSILE STRESS AT YIELD ⁹ TENSILE STRESS AT YIELD ⁹ TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa TENSILE MODULUS OF ELASTICITY ¹⁰ COMPRESSION TEST ¹¹ COMPRESSIVE STRESS AT 1/2/596 NOMINAL STRAIN ¹⁰ ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED CHARPY IMPACT STRENGTH - NOTCHE	MAXIMUM ALLOWABLE SERVICE TEMPERATURE IN AIR				
MINIMUM SERVICE TEMPERATURES TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa ISO 75-1/-2 C 42 VICAT SOFTENING TEMPERATURE - VST/BSO ISO 306 C 80 FLAMMABILITYS "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) ACCORDING TO UL94 (6MM DE ESPESSURA) MECHANICAL PROPERTIES AT 23°C¹ TENSION TEST® TENSILE STRESS AT YIELD® TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa 700 COMPRESSION TEST¹¹ COMPRESSION TEST¹¹ COMPRESSION STRESS AT 1/2/59% NOMINAL STRAIN¹⁰ ISO 50 527-1/-2 MPa 6/10/16 CHARPY IMPACT STRENGTH - NOTCHED¹² CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)³ BALL INDENTATION HARDNESS¹³ SHORE HARDNESS D (15 S)¹³ ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH SEC AT 23°C ELECTRIC DISSIPATION FACTOR TAN 8: A 100HZ IEC 60250	FOR SHORT PERIODS ³		-	°C	135
TEMPERATURE OF DEFLECTION UNDER LOAD METHOD A: 1.8 MPa ISO 75-1/-2 °C 42 VICAT SOFTENING TEMPERATURE - VST/B50 FLAMMABILITY° "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) MECHANICAL PROPERTIES AT 23°C' TENSION TEST® TENSILE STRESS AT YIELD® TENSILE STRAIN AT BREAK TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa TENSILE STREST® TOMPRESSION TEST® COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN® COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN® EHARPY IMPACT STRENGTH - UNNOTCHED® ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED BALL INDENTATION HARDNESS® ELECTRICAL PROPERTIES AT 23°C E	CONTINUOUSLY: FOR 20.000H ⁴			۰C	110
METHOD A: 1.8 MPa VICAT SOFTENING TEMPERATURE - VST/B50 ISO 306 C 80 FLAMMABILITY° "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) MECHANICAL PROPERTIES AT 23°C? TENSION TEST° TENSILE STRESS AT YIELD° TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa TENSILE MODULUS OF ELASTICITY° COMPRESSION TEST° COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN° COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN° CHARPY IMPACT STRENGTH - UNNOTCHED¹ ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)³ SHORE HARDNESS D (15 S)³4 ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)³4 ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹5 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10¹4 SURFACE RESISTIVITY IEC 60093 Ohm.cm > 10¹2 RELATIVE PERMITTIVITY €, A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ	MINIMUM SERVICE TEMPERATURE ⁵		-	°C	-200
VICAT SOFTENING TEMPERATURE - VST/BS0 FLAMMABILITY ⁶ "OXYGEN INDEX" ACCORDING TO UL94 (6MM DE ESPESSURA) MECHANICAL PROPERTIES AT 23°C′ TENSION TEST ⁸ TENSILE STRESS AT YIELD ⁹ TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa TENSILE MODULUS OF ELASTICITY ¹⁰ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ CHARPY IMPACT STRENGTH - UNNOTCHED ¹² ELARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH) ¹³ ISO 868 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH ¹⁵ VOLUME RESISTIVITY RELATIVE PERMITTIVITY ε, A 100HZ RELATIVE PERMITTIVITY ε, A 10HZ DIELECTRIC DISSIPATION FACTOR TAN δ: A 100HZ DIELECTRIC DISSIPATION FACTOR TAN δ: A 10HZ IEC 60250 - BISO 306 C 80 80 80 80 80 80 80 80 80	TEMPERATURE OF DEFLECTION UNDER LOAD				
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"OXYGEN INDEX" ISO 4589-1/-2 % <20 ACCORDING TO UL94 (6MM DE ESPESSURA) -	VICAT SOFTENING TEMPERATURE - VST/B50		ISO 306	°C	80
ACCORDING TO UL94 (6MM DE ESPESSURA) MECHANICAL PROPERTIES AT 23°C' TENSION TEST® TENSILE STRESS AT YIELD® TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa 700 COMPRESSION TEST® COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN® CHARPY IMPACT STRENGTH - UNNOTCHED® CHARPY IMPACT STRENGTH - NOTCHED BALL INDENTATION HARDNESS™ SHORE HARDNESS D (15 S)™ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)™ ISO 868 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹5 VOLUME RESISTIVITY RELATIVE PERMITTIVITY ε, A 100HZ RELATIVE PERMITTIVITY ε, A 1MHZ DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250	FLAMMABILITY ⁶		-		
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TENSILE STRESS AT YIELD ⁹ ISO 527-1/-2 MPa 19 TENSILE STRAIN AT BREAK ISO 527-1/-2 % >50 TENSILE MODULUS OF ELASTICITY ¹⁰ ISO 527-1/-2 MPa 700 COMPRESSION TEST ¹¹ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED ¹² ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH) ¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS ¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S) ¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH ¹⁵ IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10 ¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10 ¹² RELATIVE PERMITTIVITY ε _τ : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε _τ : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	ACCORDING TO UL94 (6MM DE ESPESSURA)		-	-	НВ
TENSILE STRESS AT YIELD ⁹ TENSILE STRAIN AT BREAK ISO 527-1/-2 MPa 700 TENSILE MODULUS OF ELASTICITY ¹⁰ ISO 527-1/-2 MPa 700 COMPRESSION TEST ¹¹ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED ¹² ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH) ¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS ¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S) ¹⁴ ISO 868 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH ¹⁵ VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10 ¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10 ¹² RELATIVE PERMITTIVITY ε _ε : A 100HZ RELATIVE PERMITTIVITY ε _ε : A 1MHZ DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250					
TENSILE STRAIN AT BREAK TENSILE MODULUS OF ELASTICITY¹0 ISO 527-1/-2 MPa 700 COMPRESSION TEST¹¹ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN¹0 ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED¹2 ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)¹³ ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)¹⁴ ISO 868 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹⁵ VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10¹² RELATIVE PERMITTIVITY ε_{r} A 100HZ RELATIVE PERMITTIVITY ε_{r} A 1MHZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - OHPA 700 **NPa 700 **NPa 700 **NPa 700 **NPa 700 **NPa 6/10/16 **NOBERAK **NJ/m² 180 **SO 179-1/1eA **KJ/m² 180 45 **N/mm 45 **VOLUME RESISTIVITY IEC 60250 - - RELATIVE PERMITTIVITY ε_{r} A 100HZ IEC 60250 - DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - OHELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250 - OHPA 700 **NPa 700 **No **NPa 700	TENSION TEST ⁸				
TENSILE MODULUS OF ELASTICITY¹0 COMPRESSION TEST¹1 COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN¹0 ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED¹2 ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹5 IEC 60243-1 KV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10¹² RELATIVE PERMITTIVITY ε,: A 100HZ RELATIVE PERMITTIVITY ε,: A 1MHZ DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 - - DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250 - - IEC 60250	TENSILE STRESS AT YIELD9		ISO 527-1/-2	MPa	19
COMPRESSION TEST ¹¹ COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰ ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED ¹² ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH) ¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS ¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S) ¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH ¹⁵ IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10 ¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10 ¹² RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε_r : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	TENSILE STRAIN AT BREAK		ISO 527-1/-2	%	>50
COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN¹0 ISO 604 MPa 6/10/16 CHARPY IMPACT STRENGTH - UNNOTCHED¹2 ISO 179-1/1eU KJ/m² NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹⁵ IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10¹² RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	TENSILE MODULUS OF ELASTICITY ¹⁰		ISO 527-1/-2	MPa	700
CHARPY IMPACT STRENGTH - UNNOTCHED 12 ISO 179-1/1eU KJ/m 2 NO BREAK CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m 2 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14 $^\circ$ NOTCH) 13 ISO 11542-2 KJ/m 2 130 BALL INDENTATION HARDNESS 14 ISO 2039-1 N/mm 2 31 SHORE HARDNESS D (15 S) 14 ISO 868 - 58 ELECTRICAL PROPERTIES AT 23 $^\circ$ C ELECTRIC STRENGTH 15 IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10 14 SURFACE RESISTIVITY IEC 60093 Ohm > 10 12 RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	COMPRESSION TEST ¹¹				
CHARPY IMPACT STRENGTH - NOTCHED ISO 179-1/1eA KJ/m² 100P CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)¹³ ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS¹⁴ ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S)¹⁴ ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹⁵ IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10¹⁴ SURFACE RESISTIVITY IEC 60093 Ohm > 10¹² RELATIVE PERMITTIVITY ε_{r} : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	COMPRESSIVE STRESS AT 1/2/5% NOMINAL STRAIN ¹⁰		ISO 604	MPa	6/10/16
CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH) ISO 11542-2 KJ/m² 130 BALL INDENTATION HARDNESS 14 ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S) 14 ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH 15 IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10^{14} SURFACE RESISTIVITY IEC 60093 Ohm > 10^{12} RELATIVE PERMITTIVITY $\varepsilon_{\rm r}$, A 100HZ IEC 60250 RELATIVE PERMITTIVITY $\varepsilon_{\rm r}$, A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	CHARPY IMPACT STRENGTH - UNNOTCHED ¹²		ISO 179-1/1eU	KJ/m ²	NO BREAK
BALL INDENTATION HARDNESS 14 ISO 2039-1 N/mm² 31 SHORE HARDNESS D (15 S) 14 ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH 15 IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10^{14} SURFACE RESISTIVITY IEC 60093 Ohm > 10^{12} RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε_r : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	CHARPY IMPACT STRENGTH - NOTCHED		ISO 179-1/1eA	KJ/m²	100P
SHORE HARDNESS D (15 S) 14 ISO 868 - 58 ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH 15 IEC 60243-1 kV/mm 45 VOLUME RESISTIVITY IEC 60093 Ohm.cm > 10^{14} SURFACE RESISTIVITY IEC 60093 Ohm > 10^{12} RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε_r : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	CHARPY IMPACT STRENGTH - NOTCHED (DOUBLE 14° NOTCH)13		ISO 11542-2	KJ/m²	130
ELECTRICAL PROPERTIES AT 23°C ELECTRIC STRENGTH¹5 VOLUME RESISTIVITY EC 60093 $ \begin{array}{llll} $	BALL INDENTATION HARDNESS ¹⁴		ISO 2039-1	N/mm²	31
ELECTRIC STRENGTH15IEC 60243-1kV/mm45VOLUME RESISTIVITYIEC 60093Ohm.cm> 10^{14} SURFACE RESISTIVITYIEC 60093Ohm> 10^{12} RELATIVE PERMITTIVITY ε_r : A 100HZIEC 60250RELATIVE PERMITTIVITY ε_r : A 1MHZIEC 60250DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZIEC 60250DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZIEC 60250	SHORE HARDNESS D (15 S) ¹⁴		ISO 868	-	58
VOLUME RESISTIVITY IEC 60093 Ohm.cm $> 10^{14}$ SURFACE RESISTIVITY IEC 60093 Ohm $> 10^{12}$ RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε_r : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	ELECTRICAL PROPERTIES AT 23°C				
SURFACE RESISTIVITY IEC 60093 Ohm > 10^{12} RELATIVE PERMITTIVITY ϵ_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ϵ_r , A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	ELECTRIC STRENGTH ¹⁵		IEC 60243-1	kV/mm	45
RELATIVE PERMITTIVITY ε_r : A 100HZ IEC 60250 RELATIVE PERMITTIVITY ε_r : A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	VOLUME RESISTIVITY		IEC 60093	Ohm.cm	> 1014
RELATIVE PERMITTIVITY $\varepsilon_{r:}$ A 1MHZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	SURFACE RESISTIVITY		IEC 60093	Ohm	> 1012
DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	RELATIVE PERMITTIVITY ε _r : A 100HZ		IEC 60250	-	-
DIELECTRIC DISSIPATION FACTOR TAN δ : A 100HZ IEC 60250 DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ IEC 60250	RELATIVE PERMITTIVITY ε _{r:} A 1MHZ		IEC 60250	-	-
				-	-
COMPARATIVE TRACKING INDEX (CTI) IFC 60112	DIELECTRIC DISSIPATION FACTOR TAN δ : A 1MHZ		IEC 60250	-	-
	COMPARATIVE TRACKING INDEX (CTI)		IEC 60112	-	-

NOTE: 1 g/cm 3 = 1000 kg/m 3 ; 1 MPa = 1 N/mm 2 ; 1 KV/mm = 1 MV/m

(1) Measured in 1 mm test pieces. (2) The figures given on these properties are for the most part derived from data from suppliers of raw materials. (3) Only for periods of short exposure (few hours) in applications where only little or no weight is applied to the material. (4) Temperature which it resists for a minimum period of 20,000 hours. After this time, there is a decrease of about 50% in tensile strength compared to the original value. The given temperature values are based on the thermal oxidation degradation which occurs which causes a reduction of the properties. In the meantime, the maximum permissible service temperature depends in many cases essentially on the deduction and magnitude of the mechanical stresses to which the material is subject. (5) As the impact strength decreases with decreasing temperature, the minimum permissible service temperature is determined by the extent of impact to which the material is subjected. The values given are based on unfavorable impact conditions and can not therefore be considered absolute limits. (6)

These assessments are derived from the technical specifications of the manufacturers of the raw materials and do not allow the determination of the behavior of the materials under

fire conditions. (7) Most of the figures given by the mechanical properties of the extruded materials are mean values of 30 mm-thick plate tests. (8) Testing of test pieces: Type 1B. (9) Speed test: 50 mm / min. (10) Speed test: 1 mm / min. (11) Testing of test pieces: cylinders ø 8x16 mm. (12) Pendulum used: 15J. (13) Pendulum used: 25J. (14) Measured on 10 mm thick test pieces. (15) Electrode configuration: ø 25 / 75mm coaxial cylinders; in transformer oil in accordance with IEC 60296; Test samples 1 mm thick.