

Technical Data

TIVAR® Materials

Material designation

ISO designation

TIVAR® CleanStat

PE-UHMW

Material description

Ultra High Molecular Weight
 Polyethylene with
 anti-static properties,
 food approved

Colour(s)

black

Material properties

	Standard	Unit	
Average molecular weight (average molecular mass)		(g/mol)	approx. 5×10^6
Density	ISO 1183	(kg/m ³)	940
Water absorption at 23° C until saturation	ISO 62	(%)	< 0,01

Mechanical properties

	Standard	Unit	
Tensile stress at yield (tensile strength)	ISO 527	(MPa)	≥ 17
Elongation at break	ISO 527	(%)	≥ 350
Tensile modulus	ISO 527	(MPa)	700
Impact strength (Charpy) at 23° C	ISO 179	(kJ/m ²)	no break
Notched impact strength (Charpy) at 23° C	ISO 11542-2	(kJ/m ²)	100
Ball indentation hardness	ISO 2039-1	(N/mm ²)	30 - 35
Shore-Hardness D, 15 s value	ISO 868	(-)	60 - 65
Coefficient of friction	-	(-)	0,2
Abrasion (Sand-Slurry)	-	(%)	80

Thermal properties

	Standard	Unit	
Melting point DSC, 10 K/min	ISO 3146	(°C)	135 - 138
Vicat softening point	ISO 306	(°C)	80
Coefficient of linear thermal expansion between 23 and 80° C	ISO 11359	(K ⁻¹)	2×10^{-4}
Thermal conductivity	ISO 52612	(W/[m * K])	approx. 0,4
Use temperature (max.)	-	(°C)	80
Use temperature (briefly)	-	(°C)	90
Use temperature (min.)	-	(°C)	-200

Electrical properties

	Standard	Unit	
Relative permittivity at 100 Hz	IEC 60250	(-)	-
Dissipation factor at 100 Hz	IEC 60250	(-)	-
Volume resistivity	IEC 60093	(Ohm * m)	< 10 ⁴
Surface resistivity	IEC 60093	(Ohm)	< 10 ⁹
Dielectric strength	IEC 60243	(kV/mm)	-

Physiological properties

	Standard	Unit	
Food conformances according to EU Directive 2002/72/EC			yes
FDA Regulation 21CFR177.1520			yes
FDA Regulation 21CFR178.2010			N/A
FDA Regulation 21CFR178.3297			yes
3A-Dairy Sanitary Standard			20 - 23

Notice to users:

The technical data shown in this data sheet refers to a 40 mm thick sheet. Due to the production process the data may vary depending on the material thickness.

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