Technical Information – Relating to Mecaline Chain Guide Rails

Technical properties	Standard	Unit	Characteristics
Code	ISO 1043-1	-	PE-UHMW
Material colour		-	green
Average molecular weight	-	g/mol	-
Sheet group	DIN EN ISO 15527	-	-
Density	DIN EN ISO 1183-1	kg/dm^3	≤0,96
Water absorption - saturation at 23 °C		%	<0,01

Mechanical properties [1]			
Yield stress	DIN EN ISO 527-2	MPa	~20
Breaking elongation	DIN EN ISO 527-2	%	>280
Coefficient of elasticity (tensile test)	DIN EN ISO 527-2	MPa	>700
Charpy impact strength - two-sided notch	DIN EN ISO 179	kJ/m^2	≥80
Shore hardness D	DIN EN ISO 868	°	61-65
Indentation hardness	DIN EN ISO 2039	MPa	>30
Sand-Slurry-Test	DIN EN ISO 15527	%	120
Average coefficient of friction against steel [6] (0,25 m/s, 0,25 N/mm^2)		µ	~0,2
Average coefficient of friction against POM [6] (0,25 m/s, 0,25 N/mm^2)	-	µ	-

Thermal properties			
Heat conductivity at 23 °C	DIN 52612	W/(K x m)	0,4
Linear thermal coefficient of expansion α: (Average value between 23 and 60 °C)	DIN EN ISO 11359-2	m/(K x m)	20 x 10^{-5}
Upper service temperature short-term in air [2]	-	°C	90
Upper service temperature constant in air (5000h) [3]		°C	80
Lower service temperature [4]	-	°C	-150
Burning behavior UL 94 - sample thickness 3/6mm		-	HB/HB
Melting temperature	DIN EN ISO 3146	°C	130-135

Electrical properties [1]			
Electric strength	IEC 60243	kV/mm	≤45
Specific contact resistance	IEC 60093	Ω x cm	>10^{12}
Specific surface resistance	IEC 60093	Ω	>10^{12}

Approved for use in the food industry	
FDA	no
(EG) Nr. 1935/2004 - (EU) Nr. 10/2011	no

Legend

The material characteristic tables, which are based on data from our suppliers of raw materials, are intended to help you to quickly compare/select a material. The values stated are short-term values that can be affected by processing, environmental, and application conditions. The user is solely responsible for the suitability of the selected material for the specific application.

RH Relative humidity

NB no break

1) The mechanical and electrical characteristics are based on a test in standard atmosphere at 23 °C/ 50% relative humidity (RH).

2) Temperature stress for several hours; no or low mechanical stress (short-term service temperature).

3) Maximum continuous operating temperature in air: the specified temperature limit is based on the thermo-oxidative degradation ("aging") after the specified period. It does not refer to the mechanical strength of the material.

4) As the temperature decreases, the impact strength drops. The specified values are based on the most unfavorable impact load possible and do not represent absolute practical limits (lower service temperature).

5) Test period 24 h, oscillating measurement method.

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