

Product data sheet, January 2020

I Line Innovative

Makrolon® Titan Solid polycarbonate sheet



- extreme impact strength
- C3 Classification according to DIN EN ISO 23125⁽¹⁾
- thermoformable

Solid **Makrolon® Titan** sheets are clear, polished polycarbonate sheets. They offer extreme impact strength that exceeds the physical properties of other products of their class. **Makro-Ion®** sheets resist temperatures of -100 to +120 °C, exhibit high optical clarity and have a good fire rating.

Applications:

Typical applications for **Makrolon® Titan** sheets include machine guards.

The sheets offer protection against involuntary breakage and wilfull destruction. **Makrolon® Titan** sheets can be thermo-formed, cold-curved and machined with ease.

	Test Conditions	Typical values ⁽²⁾	Unit	Standard
Physical Density Water absorption saturation Water absorption equilibrium Refractive index	water at 23 °C 23 °C, 50% relative humidity Procedure A	1200 0.30 0.12 1.587	kg/m³ % ~	ISO 1183-1 ISO 62 ISO 62 ISO 489
Mechanical Tensile modulus Yield stress Vield strein Nominal strain at break Flexural modulus Flexural strength Charpy impact strength Charpy impact strength Izod impact strength	1 mm/min 50 mm/min 50 mm/min 2 mm/min 2 mm/min 23 °C, unnotched 23 °C, 3 mm, notched 23 °C, 3.2 mm, notched	2350 >60 6 >50 2350 90 non-break 80P 90P	MPa MPa % MPa kJ/m ² kJ/m ² kJ/m ²	ISO 527-1,-2 ISO 527-1,-2 ISO 527-1,-2 ISO 527-1,-2 ISO 178 ISO 178 ISO 179-1eU ISO 179-1eU ISO 179-1eA ISO 180-A
hermal 50 N, 50°C/h hermal conductivity 23°C oefficient of linear thermal expansion 23 to 55°C emperature of deflection under load 1.80 Mpa emperature of deflection under load 0.45 Mpa		148 0.20 0.65 128 140	°C W/(m.K) 10 ⁻⁴ /K °C °C	ISO 306 ISO 8302 ISO 11359-1, -2 ISO 75-1, -2 ISO 75-1, -2
Electrical Electrical strength Volume resistivity Surface resistivity Relative permitivity Relative permitivity Dissipation factor Dissipation factor	1 mm 100 Hz 1 MHz 100 Hz 1 MHz	34 1E14 1E16 3.1 3.0 5 10 ⁻⁴ 95 10 ⁻⁴	kV/mm Ohm.m Ohm - - -	IEC 60243-1 IEC 60093 IEC 60093 IEC 60250 IEC 60250 IEC 60250 IEC 60250 IEC 60250

⁽¹⁾ International harmonization of DIN EN 12415

⁽²⁾ These values are measured on injection molded samples, and are not intended for specification purposes

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Ideas, innovative, intelligent, interesting... Exolon Group i-line represents the next generation of quality products. This seal guarantees innovative and intelligent first-class solutions at all times for a multitude of requirements.

Light Transmission: Test Method according to DIN EN ISO 13468-2. The stated values are typical values only.

Light transmission %	18	20
Makrolon® Titan clear 099	79	76

Available sizes: Makrolon[®] sheets are available in thicknesses of 18/20 mm and in the following sizes; other sizes and colors on request.

Colors:Sizes (standard):Makrolon® Titan clear 0993,050 x 2,050 mm

Permanent Service Temperature: The permanent service temperature without load is approx. 120 °C.

Fire Rating (*):

Country	Standard	Rating	Thickness	Color
Germany	DIN 4102	B2	18 – 20 mm	clear 099

(*) Fire certificates could be limited in time and scope, always check if the mentioned certificate is valid for the purchased Polycarbonate sheet type at the date of delivery. Polycarbonate sheets may change their fire behavior due to ageing and weathering. The indicated fire rating was tested on new / unweathered Product in accordance with the indicated fire classification standards.



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