

**Makrolon® TC110 FR**
PC-(T+MD)30

Covestro Deutschland AG

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	5	cm³/10min	ISO 1133
Temperature	300	°C	-
Load	1.2	kg	-
Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	6000	MPa	ISO 527
Yield stress	52	MPa	ISO 527
Yield strain	3	%	ISO 527
Nominal strain at break	4.3	%	ISO 527
Strain at Break	52	%	ISO 527
Impact Strength (Charpy), +23°C	90	kJ/m²	ISO 179/1eU
Puncture - maximum force, +23°C	3200	N	ISO 6603-2
Puncture energy, +23°C	10	J	ISO 6603-2
Flexural Modulus (23°C)	6000	MPa	ISO 178
Flexural strength	97	MPa	ISO 178

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load (1.80 MPa)	132	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	143	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	145	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	36	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	54	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-0	class	UL 94
Thickness tested	1.5	mm	-

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Volume Resistivity	1E15	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E15	Ohm	IEC 62631-3-2
Electric Strength	39	kV/mm	IEC 60243-1
Comparative tracking index	275	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Density	1450	kg/m³	ISO 1183

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120	°C	-
Pre-drying - Time	4	h	-
Melt temperature	280	°C	-
Mold temperature	90	°C	-

Characteristics**Processing**

Injection Molding

Features

Thermally Conductivity

Special Characteristics

Flame retardant

Disclaimer**Liability Exclusion**

These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

Any information given on the chemical and physical characteristics of our products, including, without limitation, technical advice on applications, whether verbally, in writing or by testing the product, is given to the best of our knowledge and in good faith and does not exempt the buyer from carrying out their own investigations and tests in order to ascertain the product's specific suitability for the purpose intended.

The buyer is solely responsible for confirming the suitability of the product for a particular application, its utilization and processing and must observe any applicable laws and government regulations. **NO EXPRESS OR IMPLIED RECOMMENDATION OR WARRANTY IS GIVEN WITH REGARD TO THE SUITABILITY OF THE PRODUCT FOR A PARTICULAR APPLICATION, SUCH AS, BUT NOT LIMITED TO, SAFETY-CRITICAL COMPONENTS OR SYSTEMS.**

Healthcare uses: the supply of any product by ALBIS for any medical, pharmaceutical or diagnostic application is conditional to an assessment by ALBIS in terms of compliance with ALBIS' internal risk management policy – even for products which are in general designated for use in Healthcare applications.

Important: irrespective of product type or designation, ALBIS does not recommend or support the use of any products it supplies which fall into the following medical, pharmaceutical or diagnostic application categories:

- risk class III applications according to EU directive 93/42/EEC
- any bodily implant application for greater than 30 days
- any critical component in any medical device that supports or sustains human life.

At all times, our standard terms and conditions of sale apply.