

Manufacturer/distributor: PyraSied Xtreme Acrylic

Brand: Versato®

Material: Clear Cast Acrylic block

1 SPECIFICATIONS

Tests done on clear sheets, 3 mm thickness at temperature of 23°C and 50% relative humidity. Information and data given are purely and indication because of the polymeric characteristics of the material.

2.1 MECHANICAL PROPERTIES

PROPERTIES	VALUE	Method ASTM	VALUE	Method DIN
Density (specific weight)	1,19 g/cm ³	D 792	1,19 g/cm ³	53479
Modulus of elasticity	32.000 Kg./cm ²	D 790	3200 N/mm ²	53457
Tensile Strenght	740 kg/cm ²	D 638	74 N/mm ²	53455
Flexural Strenght	1200 kg/cm ²	D 790	120 N/mm ²	53452
Elongation at break	3,0 %	D 638	3,0 %	53455
Impact Strenght (Izod)	2,0 kg/cm	D 256	2,0 Kj/m ²	53453
Impact Strenght (Charpy)	25 kg/cm	D 256	27 Kj/m ²	53453
Rockwell Hardness	M 100	D 785	/	/
Ball Drop H98/30	/	/	200 N/mm ²	53453

2.2 THERMAL PROPERTIES

PROPERTIES	VALUE	Method ASTM	VALUE	Method DIN
Coefficient of thermal conductivity	5,0 10 ⁻⁴ cal/cm s° C	C 177	0,19 W/m°C	52612
Deflection temperat.- 1,8 N/mm ²	105 °C	D 648	105 °C	53461
Softening Point (Vicat)	> 115 °C	D 1525	> 115 °C	53460
Coef. Linear Thermal Expanction	7,5 10 ⁻⁵ 1/°C	D 696	75 10 ⁻⁴ 1/°C	VDE0304/1
Specific Heat	0,35 cal/g°C	/	/	/

2.3 ELECTRIC PROPERTIES

PROPERTIES	VALUE	Method ASTM	VALUE	Method DIN
Dielectric Strength	20 kV/mm	D 149	20 kV/mm	53461
Volume Resistivity	1 10 ¹⁵ Ohm/cm	D 257	/	/
Surface Resistivity	1 10 ¹⁴ Ohm	D 257	1 10 ¹⁴ Ohm	53482
Transversal Resistivity	> 10 ¹⁵ Ohm/cm	D 257		
Dielectric Constant (50 Hz)	3,5	D 150	3,5	53483
Power Factor (50 Hz)	0,05	D 150	0,06	53483

2.4 OPTICAL PROPERTIES

PROPERTIES	VALUE	Method ASTM	VALUE	Method DIN
Refractive Index n_{D}^{20}	1,49	D 542	1,49	53491
Light Transmittance	92%	D 1003/A	92 %	5036
Turbidity (Haze)	0,5%	D 1003/A	/	/

2.5 CHEMICAL PROPERTIES

PROPERTIES	VALUE	METHOD
Medium molecular weight	800 – 1000 10^3 uma	viscous
Resistance to acids	good	/
Resistance to bases	good	/
Resistance to chlorous solvents (methylene chloride, chloroform, trichloroethylene etc.)	low	/
Resistance to non chlorous solvents (acetone, alcohol, petrol, etc.)	medium	/

2.6 REACTION TO FIRE

PROPERTIES	VALUE	METHOD
Flame propagation	22 – 28 mm/min.	ASTM D635/63
Igniting T.	280 – 300 °C	ASTM D 93
Autoigniting T.	425 °C	DIN 51794
Calorific power	6600 kcal/kg	/
Oxygen index	18	ASTM D28/63
Flammability	class B2	DIN 4102
Smoke density (Flamming)	Dm 50	NBS

2.7 WATER AND GAS ABSORPTION

PROPERTIES	VALUE	METHOD
Water absorption rate	30 mg	ISO 62, m.l
Max % increase of weight after water immersion	2,1%	ISO 62, m.l
Coef. of steam permeability	$2,3 \cdot 10^{-10}$ g/cmPa	/
Coef. of N ₂ permeability	$4,5 \cdot 10^{-15}$ g/cmPa	/
Coef. of O ₂ permeability	$2,0 \cdot 10^{-14}$ g/cmPa	/
Coef. of CO ₂ permeability	$1,1 \cdot 10^{-13}$ g/cmPa	/
Coef. of air permeability	$8,3 \cdot 10^{-15}$ g/cmPa	/

Verified by RSI
Date 02-04-2001

Approved by DIG