



Cast Acrylic

Data Sheet

Poly(methyl methacrylate), commonly known as "Acrylic", is a transparent thermoplastic that belongs to a group of materials called engineering plastics. It is often used in sheet form as a lightweight or shatter-resistant alternative to glass. It can also be used as a casting resin, in inks and coatings, and for many other purposes.

Acrylic is a useful material in the workshop because it can be used to make precision components for both domestic and industrial products. Typical applications include signs, glazing, safety screening, roof-lighting, furniture, lighting fitting & a lot more.

Architects, builders, installers and all users are requested to use the following and independently ascertain material suitability for their project requirements.

PHYSICAL PROPERTIES

Density	1.18 g/cm ³
Water Absorption	0.16%

* Water absorption % = (Mass after immersion - Mass after drying and before immersion) / Mass after drying and before immersion x 100

MECHANICAL PROPERTIES

Tensile Strength	76.8MPa
Tensile Modulus	3340 MPa
Elongation at Break	7.9%
Rockwell Hardness	112L
Shear Strength	76.4 MPa
Flexural Strength	93.2 MPa
Flexural Modulus	3000 MPa
Izod Unnotched Impact Strength	165 J/m C(Complete break)/ 10 pcs

OPTICAL PROPERTIES

Sample	1	2	3
Total Luminous Transmittance	93.2%	75 93.2%	75 93.2%
Maximum burning rate, mm/min	0.3%	0.2%	0.2%

THERMAL PROPERTIES

Heat Capacity (Cp) @ 50°C	1.42 J.g ⁻¹ .K ⁻¹
Deflection Temperature under Load	103.8°C
Coefficient of Linear Thermal Expansion	3.86 x 10 ⁻⁵ /°C

FLAMMABILITY PROPERTIES

Specimen	1	2	3
Burning distance, mm	75	75	75
Burning time, s	178.78	171.11	151.11
Burning rate, mm/min	25.2	26.3	29.8
Maximum burning rate, mm/min	29.8		

* Horizontal burning test

ELECTRICAL PROPERTIES

	Average
Surface Resistance R _s (Ω)	3.82×10 ¹³
Surface Resistivity ρ _s (Ω/sq)	1.64×10 ¹⁵
Volume Resistance R _v (Ω)	3.15×10 ¹³
Volume Resistivity ρ _v (Ω·cm)	3.69×10 ¹⁵
Breakdown Voltage (kV)	43.74
Dielectric Strength (kV/mm)	14.54

HANDLING and STORAGE

Prevent from fire around handling area. Maintain good housekeeping standards to prevent accumulation of dust. To avoid dust explosion resulting from the existence of powder, electrostatics eliminators and grounding should be fixed to such equipment as air transferring pipes, bag filters and hoppers. Use electrically conductive filters for bag filters.

Keep the materials at a cool dry place. Protect from direct sunlight. Rain and violent temperature fluctuation. Fire is inhibited around storage area.

* This information has been compiled from sources considered to be dependable and is, to the best of our knowledge, accurate and reliable as to the data compiled. However, no guarantee or warranty is made to its accuracy, reliability and/or completeness. It is the users responsibility to independently ascertain material suitability for project requirements. All risks of the use of the product are therefore assumed by the user.