

TECHNICAL DATASHEET

POLY-METHYL-METHACRYLATE (PMMA)

PMMA is a general purpose amorphous thermoplastic suitable for a wide variety of microfluidic applications. The material is low cost and exhibits good optical properties, moderate scratch resistance, and compatibility with fats and oils. Styrene modified PMMA has excellent UV transmission down to 340nm, improved alcohol resistance, and is significantly easier to process than PMMA homopolymers. PMMA can be sterilized using ethylene oxide, gamma irradiation, and hydrogen peroxide vapor. Parallel Fluidics offers a styrene modified medical grade resin designed for use up to 85°C.

Property	Value	Unit	Test Standard*
Physical Properties			
Density	1190	kg/m ³	ASTM D792
Melt Flow Rate	7.0	g/10min	ASTM D1238
Moisture Absorption (23°C-sat)	0.30	%	ASTM D570
Vapor Permeability (23°C, 85% RH)	-	-	-
Mechanical Properties			
Tensile Modulus	3200	MPa	ASTM D638
Tensile Stress at Break	65.5	MPa	ASTM D638
Tensile Strain at Break	4-6	%	ASTM D368
Izod Notched Impact Strength	19.0	J/m	ASTM D256
Hardness (Rockwell M)	94	-	ASTM D785
Thermal Properties			
Glass Transition Temperature (10°C/min)	-	-	-
Heat Deflection Temperature (0.46 MPa)	95	°C	ASTM D648
Vicat Softening Temperature (50°C/hr. 50N)	105	°C	ASTM D648
Linear Coefficient of Thermal Expansion	72.0	µm/m·°C	ASTM D696
Optical Properties			
Light Transmission (3mm)	92.0	%	ASTM D1003
Haze	<1.0	%	ASTM D1003
Refractive Index (598nm, 25°C)	1.49	-	ASTM D452
Abbe Number	30	-	-

* Reported properties and may vary depending on the information available from the manufacturer. Other test methods may report different values and should be considered when comparing materials. More information may be available upon request.