

Polymethyl Methacrylate

Aramco PMMA R2009UM

Product Description

Aramco PMMA R2009UM is a polymethyl methacrylate general-purpose heat resistant resin and is typically used for industrial components.

Typical Applications

Houseware, rear tail lamps, optical lenses and speedometer for automotive. Extrusion sheets, pipes and rods.

Optical properties	Unit	Test Method	Value ⁽¹⁾
Refractive Index	---	ISO 489	1.49
Total Luminous Transmittance	%	ISO 13468-1	92
Haze	%	ISO 14782	< 0.5
Thermal Properties			
Coefficient of Linear Expansion	1/ °C	ISO 11359-2	7×10^{-5}
Vicat Softening Temperature (VST)	°C	ISO 306 (B50)	109
Deflection Temperature Under Load 1.80 MPa (annealed)	°C	ISO 75-2Af	101
Melt Flow Rate (230°C/3.8kg)	g/10min	ISO 1133	2
Mechanical Properties			
Tensile Strength at break	MPa	ISO 527-2	76
Tensile Strain at break	%	ISO 527-2	4
Flexural Strength	MPa	ISO 178	120
Flexural Modulus	MPa	ISO178	3100
Charpy Impact Strength (notched)	kJ/m ²	ISO 179 (1eA)	1.4
Rockwell Hardness Scale M	-	ISO 2039-2	100
Electrical Properties			
Surface Resistivity	Ω	IEC 60093	$> 10^{16}$
Volume Resistivity	Ω cm	IEC 60093	$> 10^{15}$
Insulation Resistance	Ω	IEC 60167	$> 10^{15}$
Dielectric Strength	kV/mm	IEC 60243-1	20
Dielectric Constant (1MHz)	---	IEC 60250	3.1
Other Properties			
Specific Gravity	---	ISO 1183	1.19
Mold Shrinkage	%	ISO 294-4	0.2 - 0.6
Water Absorption	%	ISO 62	0.3
Flammability	---	UL 94	HB

(1) Typical values only, not to be construed as specification limits

Saudi Aramco: Company General Use

Disclaimer: © Saudi Aramco Products Trading Company. All information supplied by or on behalf Saudi Aramco Products Trading Company in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and believed reliable, but Saudi Aramco Products Trading Company assumes no liability whatsoever in respect of application, processing or use made of the provided information or products, or any consequence thereof. The user is solely responsible and liable with respect to the application, processing or use of the provided information or product, whose quality and other properties shall be verified, or any consequence thereof. No liability whatsoever shall attach Saudi Aramco Products Trading Company for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of the application, processing or use of the provided information or products by the user. To the extent the user is entitled to disclose and distribute this document, the user may forward, distribute, and/or photocopy this copyrighted document only if unaltered and complete, including all of its headers, footers, disclaimers and other information.

Processing conditions: Typical processing conditions are as follows:

Recommended Injection Molding Conditions		
Pre-Drying Conditions	Temp., °C	80 - 90
	Time/h	4 - 6
Barrel Temp.	Front °C	240 - 260
	Middle °C	230 - 260
	Back °C	220
Mold Temp.	°C	60 - 85
Injection Pressure	MPa	140 - 160
Hold Pressure	MPa	20 - 80
Back Pressure	Gauge MPa	0.9 - 1.4
Screw Speed	rpm	40 - 60
Cooling Time	s	20 - 60
Recommended Extrusion Molding Conditions		
Screw L/D		30 - 35
Cylinder Temp. °C	Hopper Side	200 - 210
	Center Side	230 - 240
	Die Side	240 - 245
Die Temp. °C		235 - 245
Recommended Annealing Conditions		
Temp. °C		75 - 85
Time/h		4

Storage and handling: Aramco PMMA R2009UM should be stored in accordance with state and local regulations. In case of spillage, remove pellets immediately to prevent potential slipping hazard. Aramco PMMA R2009UM should be kept away from direct sunlight, water and moisture and be stored at ambient temperature.

Regulations: Detailed information is provided in Safety Data Sheet and for additional specific information, please contact Saudi Aramco Products Trading Company for certificates.

Saudi Aramco: Company General Use

Disclaimer: © Saudi Aramco Products Trading Company. All information supplied by or on behalf Saudi Aramco Products Trading Company in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and believed reliable, but Saudi Aramco Products Trading Company assumes no liability whatsoever in respect of application, processing or use made of the provided information or products, or any consequence thereof. The user is solely responsible and liable with respect to the application, processing or use of the provided information or product, whose quality and other properties shall be verified, or any consequence thereof. No liability whatsoever shall attach Saudi Aramco Products Trading Company for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of the application, processing or use of the provided information or products by the user. To the extent the user is entitled to disclose and distribute this document, the user may forward, distribute, and/or photocopy this copyrighted document only if unaltered and complete, including all of its headers, footers, disclaimers and other information.