



TECHNICAL BULLETIN 123

Physical Properties - GPA

Aristech Surfaces Acrylic Sheet GPA is a "general purpose" cast acrylic sheet derived from a unique formulation which is easily fabricated and solvent cementable. The following physical properties were determined using 0.125" (3.17 mm) thickness clear Aristech Surfaces Acrylic Sheet. Properties may vary somewhat on other thicknesses and/or colors (translucent, transparent or opaque).

PROPERTY	TYPICAL VALUES	UNITS	TEST METHOD
General:			
Thickness	0.125 (3.17)	Inch (mm)	—
Specific Gravity	1.19	—	ASTMD-792
Optical (Unaged):			
Refractive Index	1.49	—	ASTMD-542
Light Transmission	93.0	%	ASTMD-1003
Haze	0.8	%	ASTMD-1003
Ultraviolet Light Transmission (250-370 nanometers)	<1.0	%	UV Spectrophotometer
Optical (Aged):			
Light Transmission	93.0	%	ASTMD-1003
Haze	<2.0	%	ASTMD-1003
Yellowness Index	+0.50	YI	ASTME-313
Mechanical:			
Tensile Strength	10,000 (68.9)	psi (MPa)	ASTMD-638
Tensile Modulus	460,000 (3,171)	psi (MPa)	ASTMD-638
Tensile Elongation	5.0	%	ASTMD-638
Flexural Strength	16,000 (110)	psi (MPa)	ASTMD-790
Flexural Modulus	450,000 (3,102)	psi (MPa)	ASTMD-790
Notched Izod Impact	0.4 (2.1)	ft.-lb/in. of notch (kJ/m ²)	ASTMD-256 (Method A)
Charpy Impact (Un-notched)	5.7 (29.9)	ft.-lb/in. (kJ/m ²)	ASTMD-6110
Falling Dart Impact	4.0 (5.4)	ft.-lbs. (J)	FTMS 406-M-1074
Rockwell Hardness (M)	90-100	—	ASTMD-785
Barcol Hardness	48-52	—	ASTMD-2583
Thermal:			
Hot Forming Temperature	320-380 (160-193)	°F (°C)	Aristech Method
DTUL @264 psi (1.82 MPa)	190 (88)	°F (°C)	ASTMD-648
Thermal Conductivity	1.4 (20.2)	Btu/(h-ft ² -°F/in) (W/(m ² -K/cm))	Cinco-Fitch
Specific Heat	0.35 (1465)	Btu/(lb-°F) (J/(kg-K))	ASTM C-351
Coefficient of Linear Thermal Expansion	.000041 (.000074)	in./in./°F (cm/cm/°C)	ASTMD-696

PROPERTY	TYPICAL VALUES	UNITS	TEST METHOD
Thermal: (continued)			
Thermal Stability 30 min. @ 356°F (180°C)	No degradation	—	ASTMD-4802
Flammability	94 HB	—	UL Test # 94
Miscellaneous:			
Water Absorption	0.35	%	ASTMD-570
Odor	None	—	—
Taste	None	—	—

For cautions and other information relating to handling of an exposure to this product, please see the applicable material safety data sheet published by Aristech Surfaces.

These instructions are based upon experience with Aristech Surfaces products only. Experience with products of other manufacturers is specifically disclaimed. For most uses, check for local code approval and test for application suitability. These procedures, techniques and suggested materials should only be used by personnel who are properly trained in the safe handling of the chemicals and the equipment with which they are working. Avoid aromatic solvents, clean with mild soap and water, avoid abrasives. These suggestions are based on information believed to be reliable, however, Aristech Surfaces makes no warranty, guarantee, or representation and assumes no obligations or liability as to the absolute correctness or sufficiency of any of the foregoing, or that additional or other measures may not be required under particular conditions or circumstances.

