

# CAST ACRYLIC – SPECIFICATIONS



Acrylic is a transparent plastic material with outstanding strength, stiffness, and optical clarity. Acrylic sheet is easy to fabricate, bonds well with adhesives and solvents, and is easy to thermoform. It has superior weathering properties compared to many other transparent plastics.

PROPERTIES	UNITS	RESULTS	TEST METHOD (ASTM)
Specific Gravity	-	1.19	D 792-60 T
Refractive Index	-	1.49	D 542-50
Light Transmittance	-	-	D 1003-61
Parallel	%	92	-
Total	%	93	-
Haze	%	1	-
<b>THERMAL</b>			
Hot Forming Temperature	°C	140-180	-
Heat Distortion Temperature 2°C /min-264 p.s.i	°C	85	D 648-56
Maximum Recommended Continuous Srve Temperature	°C	85	-
<b>MISCELLANEOUS</b>			
Flammability	mm/min	33	D 635-63
Water Absorption	-	-	-
Wt. Gain on Immersion for 24hrs	%	0.3	D 570-63
Odor	-	None	-
Taste	-	None	-

## APPLICATIONS

Optical Lens  
Light Guide  
Simulate glass

\*This data sheet describes some of the properties of cast acrylic sheet (S-000, thickness 3mm)

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MECHANICAL	UNITS	RESULTS	TEST METHOD (ASTM)
Tensile Strength	-	-	D 638-61T
Rupture	kg/cm <sup>2</sup>	760	-
Modulus of Elasticity	kg/cm	30000	-
Elongation	%	4.5	-
Flexual Strength	-	-	D 790-63
Rupture	kg/c	1050	-
Modulus of Elasticity	kg/c	30000	-
Compressive Strength	-	-	D 695-63 T
Yield	kg/c	1260	-
Modulus of Elasticity	kg/c	30000	-
Shear Strength	kg/c	630	D 732-46
Impact Strength	-	-	D 256-56
Izod Milled Notc (200 gr.steel ball)	m	0.4	-

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## PHYSICAL PROPERTIES OF ACRYLIC SHEET

1. Has the highest ligh transmittance among all kinds of plastic sheets
2. Light transmittance: 92-93%
3. Thickness is positively related to light-guide performance
4. Low specific gravity (1.19); only half weight of glass
5. Great anti-shatter performance: 7 to 18 times better than glass
6. Impact strength is 10 times higher than that of glass
7. Impact strength remains unchanged at a low (-50°C) or high (100°C) temperature
8. Graet weatherability and aging-resistance
9. Great thermoformability
10. Good oil and chemical resistance

## MISUNDERSTANDINGS

-Acrylic sheet has a superior weatherability property and dies not yellow easily unless it is made from cheap recycled instead of pure acrylic pallets or clear monomers.

-It is not common to see crazes on the surface of acrylic sheet unless it is improperly fabricated, packed in a film containing plasticizer or made from cheap recycled material.

-The color stability of acrylic sheet is usually high unless low-quality (in terms of weatherability) pigments are used for the production.

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