

Royalite R52

Acrylic (PMMA) + PVC

Spartech Plastics

Message:

ROYALITE® R52 thermoplastic sheet provides a fire-rated, rigid acrylic/PVC product that combines very high impact strength, tensile strength, stiffness and hardness with excellent formability. It is recognized under the component program of Underwriters Laboratories, Inc. with a classification of UL94V-0 at 0.027in gauge and UL94-5VA at 0.051in gauge. ROYALITE® R52 sheet has excellent chemical and stain resistance. ROYALITE® R52 sheet is very economical and is available in a wide range of standard and custom colors, thicknesses and blank sizes.

APPLICATIONS:

The combination of properties provided by ROYALITE® R52 thermoplastic sheet makes it the preferred choice for a wide range of applications. Its outstanding chemical resistance and deep draw formability make it suitable for many industrial applications such as trays, tote boxes, ducts, flumes, tanks and sinks. High rigidity and toughness, together with an excellent fire-rating at thin gauges, make ROYALITE® R52 sheet ideal for electronic components and enclosure applications.

PROCESSING:

ROYALITE® R52 thermoplastic sheet can be processed on virtually all thermoforming equipment from high-volume, multi-station rotary machines to hand-operated presses. It is readily hand-formed for prototyping and is suitable for use with aluminum and epoxy molds and fine-grain wood molds such as mahogany. This material is also excellent for pressure forming applications. Care must be taken in forming so as not to overheat the sheet since ROYALITE® R52 is an acrylic/PVC alloy. Stock temperatures of approximately 330°F-380°F are recommended for proper forming. As with any thermoplastic material, care should be taken to account for the coefficient of thermal expansion when considering design parameters. Please contact Royalite for data relating to a specific application or equipment.

COLORS & TEXTURES:

ROYALITE® R52 is offered in a tremendous range of colors with a multitude of textures ranging from smooth to deep-textured. This Royalite product is normally capped with calendered film, which provides exceptional color and gloss control, plus outstanding grain retention after forming.

FINISHING:

With conventional plastic fabricating tools, it is possible to machine, saw, drill, rout and grind this rigid Royalite sheet. It can be punched and die-cut, and paints can be applied by spray, silk screen or roller coating. For optimum performance, paints formulated for plastics must be used. As long as proper procedures are followed, this material can be joined to other materials, or itself, by adhesive bonding, ultrasonic welding and by mechanical fasteners such as screws and rivets. Please contact Royalite for specific recommendations.

AVAILABILITY:

ROYALITE® R52 fire-rated* rigid acrylic/PVC sheet is available in a wide variety of standard and custom colors, grain textures, gauge and blank sizes subject to normal production scheduling. Available width range is from 12" to 54". Gauges range from 0.028" to 0.312". Widths and gauges outside the standard are available with some restrictions.

General Information	
UL YellowCard	E52355-242627
Features	Ultra-high impact resistance
	Ultrasonic weldable
	Rigidity, high
	Rigidity, high
	High tensile strength
	stain resistance
	Sprayable
	Machinable
	Adhesiveness
	Good wear resistance
	Good adhesion
	Low temperature resistance
	Good chemical resistance
	Heat resistance, high

Good toughness

High hardness

Flame retardancy

Uses	Electrical/Electronic Applications Tools/Parts Box Industrial application Industrial water tank Bracket tray		
Forms	Particle		
Processing Method	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.35	g/cm ³	ASTM D792
Molding Shrinkage - Flow	0.40 - 0.60	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	100		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength - Flow (Yield)	40.0	MPa	ASTM D638
Flexural Modulus	2210	MPa	ASTM D790
Flexural Strength	65.5	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (22°C)	640	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Annealed)	65.6	°C	ASTM D648
CLTE - Flow	8.1E-5	cm/cm/°C	ASTM D696
Thermal Conductivity	0.15	W/m/K	ASTM C177
Flammability	Nominal Value		Test Method
Flame Rating			UL 94
0.686 mm	V-0		UL 94
0.787 mm	5VB		UL 94
1.30 mm	5VA		UL 94
Flame Spread Index			ASTM E162
Flammability	Passes		FMVSS 302
Thermoforming Molding Temperature - Machine	166 - 193	°C	
NOTE			
1.	Color Dependent		

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

