

Royalite R21

Acrylonitrile Butadiene Styrene

Spartech Plastics

Message:

ROYALITE® R21 thermoplastic sheet is an economical, rigid ABS product that provides an ideal balance of properties not available in most low cost ABS sheets. It combines high impact strength and outstanding formability with high tensile strength, high stiffness and excellent low and high temperature performance.

APPLICATIONS:

The truly exceptional formability of ROYALITE® R21 sheet has made it the fabricator's choice for difficult parts. Applications range from office furniture and specialized cases to machine guards and housings.

PROCESSING:

ROYALITE® R21 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 good for pressure forming applications. Stock temperatures of approximately 340°F-390°F are recommended for proper forming. Please contact Royalite for data relating to a specific application or equipment.

COLORS & TEXTURES:

ROYALITE® R21 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 gives exceptional color and gloss control, plus outstanding grain retention after forming. An optional weatherable cap sheet may be requested to provide the extra benefit of outdoor weatherability.

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® R21 rigid ABS sheet is available in a wide variety of economy, standard and custom colors, grain textures, gauges and blank sizes subject to normal production scheduling. Standard maximum capped width available is 54" and 88" uncapped. Maximum gauge is 0.375". Widths and gauges outside the standard are available with some restrictions.

General Information	
Features	Ultra-high impact resistance
	Ultrasonic weldable
	Rigidity, high
	High tensile strength
	Workability, good
	Sprayable
	Machinable
	Adhesiveness
	Good adhesion
	Low temperature resistance
	Heat resistance, high
Uses	Mechanical maintenance/repair
	Furniture
	Container
	Shell
Appearance	Available colors

Forms	Sheet		
Processing Method	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.02 - 1.08	g/cm ³	ASTM D792
Molding Shrinkage - Flow	0.50 - 0.70	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	96		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength - Flow (Yield)	33.1	MPa	ASTM D638
Flexural Modulus	1860	MPa	ASTM D790
Flexural Strength	55.2	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
-29°C	130	J/m	ASTM D256
22°C	370	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	97.8	°C	ASTM D648
CLTE - Flow	7.6E-5 - 1.0E-4	cm/cm/°C	ASTM D696
Thermal Conductivity	0.25 - 0.30	W/m/K	ASTM C177
Flammability	Nominal Value		Test Method
Flammability	Passes		FMVSS 302
Thermoforming Molding Temperature - Machine	171 - 199	°C	
NOTE			
1.	Color dependent		

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Recommended distributors for this material

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