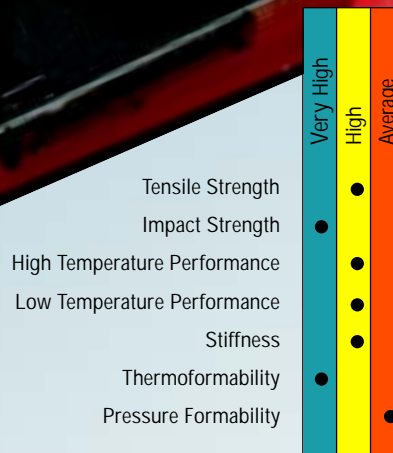


# ROYALITE®

# R21

## RIGID ABS SHEET



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.

# ROYALITE® R21

RIGID ABS  
SHEET

## 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.

## SUMMARY OF PROPERTIES:

ROYALITE® R21 thermoplastic sheet is a general purpose rigid ABS product with very high impact strength, outstanding formability, high tensile strength and stiffness. It also has excellent low and high temperature performance.

PHYSICAL PROPERTIES (units)	AVERAGE VALUES	TEST METHODS
Specific Gravity	1.02-1.08 †	ASTM D-792
Tensile Strength, machine direction	(psi) 4800	ASTM D-638
Flexural Strength	(psi) 8000	ASTM D-790
Flexural Modulus	(10 <sup>6</sup> psi) 2.7	ASTM D-790
Impact Strength @ 72°F	(ft-lb/in notch) 7.0	ASTM D-256
Notched Izod @ -20°F	(ft-lb/in notch) 2.5	
Hardness	Rockwell Scale R 96	ASTM D-785
Heat Deflection Temperature (annealed) @ 264 psi	(°F) 208	ASTM D-648
Thermal Conductivity	(BTU/in/hr/ft <sup>2</sup> /°F) 1.7-2.1	ASTM C-177
Coefficient of Thermal Expansion	(in/in/°Fx10 <sup>-5</sup> ) 4.2-5.6	ASTM D-696
Thermoforming Temperature Range	Low (°F) 340 High (°F) 390	Machine
Mold Shrinkage	(in/in) 0.005-0.007	
Flammability Rating*: Motor Vehicle Standard	Passes	FMVSS 302

† Color dependent

\* This term and any corresponding data refer to typical performance in the specific tests indicated and should not be construed to imply this material's behavior under actual fire conditions.

**NOTE: The data listed herein reflect typical sheet properties. They are the latest available at the time of publication and are reliable to the best knowledge of Royalite. The properties are listed solely to give general guidance and are not to be construed as a warranty or representation for which Royalite assumes responsibility.**

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**ROYALITE®**

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