

# Royalite<sup>®</sup> R61



**ROYALITE<sup>®</sup> R61** thermoplastic sheet is formulated to meet the smoke and fire specifications recommended by the Federal Transit Administration (formerly UMTA.) It consistently meets FTA guidelines for flammability\* and smoke emission\* as measured by ASTM E-162 and ASTM E-662 respectively, at thicknesses of 0.090" and greater. This fact should be carefully considered when designing parts, as end use compliance may be based on the thickness of the part when it is installed.

## APPLICATIONS

The combination of properties provided by ROYALITE<sup>®</sup> R61 sheet makes it the product of choice for a wide range of applications. It is ideally suited for applications in mass transportation i.e. seat backs, overhead storage bins, trays, side panels, window surrounds, etc. Potential applications include office equipment, interior building facades and industrial equipment where reduced smoke generation is desirable.

## COLORS & TEXTURES

ROYALITE<sup>®</sup> R61 is offered in a tremendous range of colors with a multitude of textures ranging from smooth to deep-textured. This Royalite product is 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.

\* 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.

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## AVAILABILITY

ROYALITE<sup>®</sup> R61 is available in various custom colors, grain textures, gauges and blank sizes subject to normal production scheduling. Widths and gauges outside the standard are available with some restrictions.

Sheets Size – maximum width 60"

Gauges – 0.090"-0.250"

Minimum Order – 500 lbs.

## CLEANABILITY

As with all plastics, extreme care should be taken when selecting a cleaning agent. Mild soap and water are recommended. Any other solution should be used with extreme caution as it may cause discoloration or degrade the material. Contact Royalite for suggested guidelines.

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## PROCESSING

ROYALITE® R61 thermoplastic sheet can be processed on most standard thermoforming equipment using conventional forming methods. For some complex shapes and deep draw parts, it may be necessary to use predraw boxes and/or plug assists. It is suitable for use with aluminum and epoxy molds and fine-grain wood molds such as mahogany. Temperature-controlled molds are recommended with the temperature maintained between 140°F-155°F. Care must be taken in forming so as not to overheat the sheet since ROYALITE® R61 is a PVC/acrylic alloy. Stock temperatures of approximately 330°F-380°F (infrared measured) 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.

## TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	DATA
Specific Gravity	D-792		1.35-1.40†
Tensile Strength, machine direction	D-638	(psi)	5,900
Flexural Strength	D-790	(psi)	9,700
Flexural Modulus	D-790	(10 <sup>5</sup> psi)	3.3
Impact Strength Notched Izod @ 72°F	D-256	(ft-lb/in notch)	3.0
Hardness	D-785	Rockwell Scale R	103
Heat Deflection Temperature (annealed) @ 264 psi	D-648	(°F)	175
Taber Abrasion	C <sub>s</sub> -10, 1000g, 1000 cycles	grams	0.05
Thermoforming Temperature Range	Machine	Low (°F) High (°F)	330 380

## FLAMMABILITY RATING\*:

Motor Vehicle Standard	FMVSS 302		Passes
Underwriter Labs	UL 94 V-0		Passes <sup>(1)</sup>
Radiant Panel (Flame Spread Index)	E-162		10 <sup>(2)</sup>
Smoke Density*	E-662 & NFPA-258 (using 0.090" sheet in NBS smoke chamber)	Ds @ 90 sec. Ds @ 4 min.	<100 <sup>(3)</sup> <200 <sup>(3)</sup>

† Color Dependent

<sup>(1)</sup> At 0.031" (0.78mm)"

<sup>(2)</sup> At 0.090" (2.29mm)

<sup>(3)</sup> At 0.060" (1.52mm)

\* 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. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own test to determine the safety and suitability of each such product or product combination for their own purposes. We sell the products without warranty. Buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in combination with other products.

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