ROYALITE® R59

FIRE-RATED* RIGID ABS/PVC SHEET

ROYALITE® R59 thermoplastic sheet provides a unique ABS/PVC product that meets many industry flammability standards. It is recognized under the component program of Underwriters Laboratories, Inc. with a classification of 94V-1 at 0.058", 94V-0 at 0.085" and 94-5VA at 0.085". It combines very high impact strength with excellent ductility and formability.

APPLICATIONS:

Because of its fire rating*, ROYALITE® R59 sheet has won acceptance in a variety of applications from rapid transit vehicle interiors to computer and electronic data processing terminals. High rigidity in thin gauges coupled with consistent high quality color, texture and gloss makes ROYALITE® R59 sheet ideal for such varied applications as computer side panels and airport seating.

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FIRE-RATED*
RIGID
ABS/PVC
SHEET

PROCESSING:

ROYALITE® R59 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® R59 is an ABS/PVC alloy. Stock temperatures of approximately 325°F-400°F are recommended for proper forming. Please contact Royalite for data relating to a specific application or equipment.

COLORS & TEXTURES:

ROYALITE® R59 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:

A range of standard colors of ROYALITE® R59 ABS/PVC sheet, is available from our warehouse, with a Level Haircell grain in a 54" x 94" blank size in gauges ranging from 0.062" to 0.250". Specific blank sizes can be cut to order for an extra charge. For a specific listing of our warehouse offerings, please contact us or our nearest distributor. Warehouse material can normally ship within 72 hours of receipt of the order.

Other standard and custom colors, grain textures, gauges and blank sizes are available subject to normal production scheduling. Maximum width available is 54". Gauges range from 0.031" to 0.312". Widths and gauges outside the standard are available with some restrictions.

SUMMARY OF PROPERTIES:

ROYALITE® R59 thermoplastic sheet is a unique ABS/PVC product that is fire-rated* and has very high impact strength, high tensile strength, excellent ductility and formability.

PHYSICAL PROPERTIES (units)			AVERAGE VALUES	TEST METHODS
Specific Gravity			1.18-1.25 †	ASTM D-792
Tensile Strength, machine direction		(psi)	5000	ASTM D-638
Flexural Strength		(psi)	7800	ASTM D-790
Flexural Modulus		(10^5 psi)	2.8	ASTM D-790
Impact Strength Notched Izod	@ 72°F @ -20°F	(ft-lb/in notch) (ft-lb/in notch)	8.0 1.8	ASTM D-256
Hardness		Rockwell Scale R	93	ASTM D-785
Heat Deflection Temperature (annealed)	@ 264 psi	(°F)	175	ASTM D-648
Coefficient of Thermal Expansion		(in/in/°Fx10^{-5})	4.6-5.5	ASTM D-696
Thermoforming Temperature Range		Low (°F) High (°F)	325 400	Machine
Mold Shrinkage		(in/in)	0.005-0.007	
Flammability Rating*:				
Motor Vehicle Standard			Passes	FMVSS 302
Underwriters Lab			Listed [1]	UL 94 V-0
Underwriters Lab			Listed [1]	UL 94 5VA
Radiant Panel (Flame Spread Index)			Listed	UL 94 RP-50
Relative Thermal Index (RTI)				
Electrical			85°C	UL746
Mechanical w/impact			70°C	UL746
Mechanical w/o impact			85°C	UL746

† Color Dependent
[1] At 0.085"

* 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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