

ROYALITE®

R52

FIRE-RATED*
RIGID
ACRYLIC/PVC
SHEET



Tensile Strength ●
Impact Strength ●
High Temperature Performance ●
Low Temperature Performance ●
Thermoformability ●
Pressure Formability ●

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 0.027" gauge and UL94-5VA at 0.051" 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.

ROYALITE® R52

**FIRE-RATED*
RIGID
ACRYLIC/PVC
SHEET**

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.

SUMMARY OF PROPERTIES:

ROYALITE® R52 thermoplastic sheet is a rigid, fire-rated* acrylic/PVC product that combines very high impact strength, good abrasion resistance, stiffness and hardness with excellent formability and exceptional chemical resistance.

PHYSICAL PROPERTIES (units)	AVERAGE VALUES	TEST METHODS
Specific Gravity	1.35 †	ASTM D-792
Tensile Strength, machine direction	(psi) 5800	ASTM D-638
Flexural Strength	(psi) 9500	ASTM D-790
Flexural Modulus	(10 ⁶ psi) 3.2	ASTM D-790
Impact Strength @ 72°F	(ft-lb/in notch) 12.0	ASTM D-256 Notched Izod
Hardness	Rockwell Scale R 100	ASTM D-785
Heat Deflection Temperature (annealed)	@ 264 psi (°F) 150	ASTM D-648
Thermal Conductivity	(BTU/in/hr/ft ² /°F) 1.01	ASTM C-177
Coefficient of Thermal Expansion	(in/in/°F x 10 ⁻⁵) 4.5	ASTM D-696
Thermoforming Temperature Range	Low (°F) 330 High (°F) 380	Machine
Mold Shrinkage	(in/in) 0.004-0.006	
Flammability Rating*: Motor Vehicle Standard	Passes	FMVSS 302
Underwriters Lab	Listed ⁽¹⁾	UL 94 V-0
Underwriters Lab	Listed ⁽²⁾	UL 94-5V A
Underwriters Lab	Listed ⁽³⁾	UL 94-5V B
Flame Spread Index	<6	ASTM E-162

† Color Dependent

¹ At 0.027"

² At 0.051"

³ At 0.031"

* 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.



ROYALITE THERMOPLASTICS
Spartech Plastics
3454 North Detroit Street
Warsaw, IN 46582
(574)267-7127; FAX (574)267-9711
1-800-456-9402
www.spartech.com