

Royalite[®] R12



Royalite[®] R12 is a rigid ABS thermoplastic sheet with exceptionally good high temperature performance. Although most ABS has a deflection temperature of 185°F to 210°F, Royalite[®] R12 is rated at 220°F. It has high tensile strength combined with high impact strength and stiffness, excellent formability, good ductility and low temperature properties.

TARGET MARKETS & APPLICATIONS

The ability of Royalite[®] R12 to retain its strength at high temperatures and its outstanding formability have made it a favorite with many automotive manufacturers. Applications range from heater/air conditioner housings, helicopter and aircraft interior parts to truck instrument panels and embossed passenger car insignias. Its high heat resistance allows it to be used in applications requiring sterilization by boiling water, such as tote boxes and food trays.

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.

COLORS AND TEXTURES

Royalite[®] R12 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.

AVAILABILITY

Royalite[®] R12 is available in a wide variety of economy, standard and custom colors, grain textures, gauges and blank sizes subject to normal production scheduling. Standard widths range from 12" to 54". Widths and gauges outside the standard are available with some restrictions.

Sheet Size – maximum capped width is 54", uncapped is 88"

Gauges – 0.060" to 0.375"

Page 1 of 2

Use and conditions and applicable laws may differ from jurisdiction to jurisdiction, and may be subject to change at any time. Customers are responsible for determining whether products and information are appropriate for their use. Spartech Corporation and its subsidiaries assume no liability for the accuracy or completeness of information contained herein, and all information is subject to change without notice. No freedom from infringement of any patent, trademark or copyright owned by Spartech or any of its subsidiaries is to be inferred. **NO WARRANTIES, EXPRESS OR IMPLIED, ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**



FORMING A SUSTAINABLE FUTURE

120 South Central Avenue, Suite 1700 Clayton, Missouri 63105-1705
888.721.4242 | www.spartech.com

Royalite[®] R12



PROCESSING

Royalite[®] R12 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. It is also suitable for use with aluminum and epoxy molds and fine grain wood molds such as mahogany. Care must be taken in forming so as not to overheat the sheet. Stock temperatures of approximately 340°F-400°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.

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	DATA
Specific Gravity	D-792		1.02 – 01.08†
Tensile Strength, machine direction	D-638	(psi)	5,400
Impact Strength @72°F Notched Izod @-20°F	D-256	(ft-lbs/in notch) (ft-lbs/in notch)	4.5 1.8
Flexural Strength	D-790	(psi)	8,900
Flexural Modulus	D-790	(10 ⁵ psi)	2.8
Hardness	D-785	Rockwell Scale R	96
Heat Deflection @264 psi Temperature (annealed)	D-648	(°F)	220
Thermal Conductivity	C-177	(BTU/in/hr/ft ² /°F)	1.7 – 2.1
Coefficient of Thermal Expansion	D-696	(in/in/°F/x10 ⁻⁵)	4.2 – 5.6
Thermoforming Temperature Range	Machine	Low (°F) High (°F)	340 400
Mold Shrinkage		(in/in)	0.005 – 0.007

FLAMMABILITY RATING*

Motor Vehicle Standard	FMVSS 302	Passes
------------------------	-----------	--------

† 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. 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.

For additional information, please contact Spartech Corporation at (888) 721-4242 or visit our web site at www.spartech.com.

Page 2 of 2

Use and conditions and applicable laws may differ from jurisdiction to jurisdiction, and may be subject to change at any time. Customers are responsible for determining whether products and information are appropriate for their use. Spartech Corporation and its subsidiaries assume no liability for the accuracy or completeness of information contained herein, and all information is subject to change without notice. No freedom from infringement of any patent, trademark or copyright owned by Spartech or any of its subsidiaries is to be inferred. **NO WARRANTIES, EXPRESS OR IMPLIED, ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

