

Royalite R47

Acrylic (PMMA) + PVC

Spartech Plastics

Message:

ROYALITE® R47 thermoplastic sheet is a proprietary PVC alloy that is cost competitive with acrylic/PVC alloys while maintaining physical performance and improving formability. It maintains the superior thermoforming characteristics of an ABS/PVC alloy, while bringing a higher degree of impact, tensile strength, and stiffness. It also has improved heat distortion characteristics over most acrylic/PVC sheets. Its high degree of rigidity, especially in thin gauges, and lower specific gravity when compared to competitive acrylic/PVC's allows for significant cost-per-part savings.

APPLICATIONS:

The combination of toughness, durability, and fire retardancy makes Royalite® R47 the perfect choice for a wide variety of applications. Its excellent abrasion and chemical resistance make it suitable for many industrial applications such as trays, tote boxes, ducts, and sinks. High rigidity and excellent fire rating at thin gauges make it ideal for electronic equipment and business machine housings, and improved high temperature performance over most acrylic/PVC materials makes it the material of choice for internal electronic components.

PROCESSING:

You can process this rigid thermoplastic sheet on virtually all thermoforming equipment from high-volume, multi-station rotary machines to hand-operated presses. It is readily handformed for prototyping, and is suitable for use with aluminum and epoxy molds and fine-grain wood molds such as mahogany. Because

Royalite® R47 is a PVC alloy, care must be taken in forming so as not to overheat the sheet. Stock temperatures of approximately 320-390°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 Spartech for data relating to your specific application and equipment.

COLORS & TEXTURES:

Royalite® R47 sheet can be supplied in a variety of colors and over 24 different grain patterns to meet specific aesthetic requirements. This Royalite product is normally capped with calendered film, which provides exceptional color and gloss control, plus outstanding grain retention after forming.

FINISHING:

You can machine, saw, drill, rout and grind this rigid sheet with conventional plastics fabricating equipment. It can be punched and die-cut, sanded and polished easily. So long as proper procedures are followed, you can join it to itself, or other materials, by adhesive bonding, ultrasonic welding, and by mechanical fasteners. Please contact Spartech for specific recommendations.

CHEMICAL & STAIN RESISTANCE, CLEANABILITY:

Royalite® R47 is resistant to a wide range of concentrated chemicals, and also exhibits very good stain resistance to common staining agents. Therefore, it is easily and safely cleaned with mild detergents or common cleansers. As with all plastics, extreme care should be taken when selecting a cleaning agent; some solutions may leave a residue or discolor the material. 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 Spartech for suggested guidelines.

AVAILABILITY:

Royalite® R47 is available in various custom colors, grain textures, gauges, and blank sizes subject to normal product scheduling. Maximum width available is 60". The available gauge range is 0.031" - 0.375". Some restrictions apply to widths greater than 55".

| General Information | |
|---------------------|------------------------------|
| UL YellowCard | E52355-242606 |
| Features | Ultra-high impact resistance |
| | Good dimensional stability |
| | Rigidity, high |
| | Rigidity, high |
| | High tensile strength |
| | stain resistance |
| | Cleanable |
| | Good wear resistance |
| | Good chemical resistance |
| | Heat resistance, high |
| | Durability |
| | Good toughness |

Flame retardancy

| Uses | Electrical/Electronic Applications Tools/Parts Box Business equipment Shell Bracket tray | | |
|--|--|-------------------|-------------|
| Appearance | Available colors | | |
| Forms | Particle | | |
| Processing Method | Thermoforming | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity ¹ | 1.27 - 1.30 | g/cm ³ | ASTM D792 |
| Molding Shrinkage - Flow (3.18 mm) | 0.50 - 0.70 | % | ASTM D955 |
| Hardness | Nominal Value | Unit | Test Method |
| Rockwell Hardness (R-Scale, 3.18 mm) | 100 | | ASTM D785 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Strength - Flow (Yield, 3.18 mm) | 42.1 | MPa | ASTM D638 |
| Flexural Modulus (3.18 mm) | 2410 | MPa | ASTM D790 |
| Flexural Strength (3.18 mm) | 64.8 | MPa | ASTM D790 |
| Impact | Nominal Value | Unit | Test Method |
| Notched Izod Impact (23°C, 3.18 mm) | 690 | J/m | ASTM D256 |
| Dart Drop Impact (23°C, 3.18 mm) | 36.2 | J | ASTM D5420 |
| Thermal | Nominal Value | Unit | Test Method |
| Deflection Temperature Under Load (1.8 MPa, Annealed, 3.18 mm) | 75.6 | °C | ASTM D648 |
| Flammability | Nominal Value | | Test Method |
| Flame Rating | | | UL 94 |
| 0.737 mm, All Colors | V-0 | | UL 94 |
| 2.49 mm, All Colors | 5VA | | UL 94 |
| Flammability (3.18 mm) | Passes | | FMVSS 302 |
| NOTE | | | |
| 1. | Color Dependent | | |

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