

# ROYALSTAT™

## R63

CONDUCTIVE  
FIRE-RATED\*  
RIGID ABS/PVC  
SHEET



ROYALSTAT™ R63 thermoplastic sheet from Royalite is a unique ABS/PVC product that is both electrically conductive and fire-rated\*. It meets the minimum static decay requirements outlined in MIL-B-81705C and NFPA Code 99 specifications. It is recognized under the component program of Underwriters Laboratories, Inc. with a classification of 94V-1 at 0.066". Containers made from ROYALSTAT™ R63 thermoplastic sheet provide permanent static protection. It provides the dimensional stability typical of ABS plastics required for today's robotic material handling systems. ROYALSTAT™ R63 thermoplastic sheet combines high stiffness and abrasion resistance with excellent thermoformability.

### APPLICATIONS:

ROYALSTAT™ R63 thermoplastic sheet is ideally suited for applications in the electronics industry where dissipation of electrostatic charge is critical. It provides protection against electrostatic damage to sensitive devices being assembled, transported and stored in an electronics plant. ROYALSTAT™ R63 thermoplastic sheet can be used for IC chip carriers, trays, tray dividers, tote boxes, containers, storage bins, and conductive table and floor mats. It can also provide electrostatic discharge (ESD) protection in containers used to handle explosive devices, and equipment used in oxygen-enriched and other explosive environments. Due to its fire-rated\* characteristics, it can even be used to provide electrostatic protection for internal parts in electronic devices.

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



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### PROCESSING:

ROYALSTAT™ R63 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. Temperature controlled aluminum molds are highly recommended, although epoxy and wood molds may be used for prototyping. Stock temperatures of approximately 340°F-380°F are necessary for proper forming. **Caution: Stress-free forming is required to maintain conductive properties.** Please contact Royalite for data relating to a specific application and equipment.

### COLORS & TEXTURES:

ROYALSTAT™ R63 sheet is offered in black only with a multitude of textures ranging from smooth to deep-textured.

### FINISHING:

With conventional plastic fabricating tools, it is possible to machine, saw, drill, rout and grind this rigid ROYALSTAT™ sheet. As long as proper procedures are followed, this material can be joined to other materials, or itself, by adhesive bonding, heat or ultrasonic welding and by mechanical fasteners such as screws, rivets and staples. Please contact Royalite for specific recommendations.

### AVAILABILITY:

ROYALSTAT™ R63 rigid, conductive, fire-rated\*, ABS/PVC sheet is available from our warehouse with a Level Haircell grain in a 54" x 96" blank size in gauges ranging from 0.047" to 0.250". Specific blank sizes can be cut to order for an extra charge. For a specific listing of warehouse offerings, please contact us or our nearest distributor. Warehouse materials can normally be shipped within 72 hours of receipt of the order.

Other grain textures, gauges and blank sizes are available subject to normal production scheduling. Roll stock is also available. Maximum width available is 57". Maximum gauge is 0.250". Minimum gauge is 0.030". Widths and gauges outside the standard are available with some restrictions.

### SUMMARY OF PROPERTIES:

ROYALSTAT™ R63 thermoplastic sheet is a conductive ABS/PVC product that is fire-rated\* and has high tensile strength, excellent ductility and exceptional formability.

PHYSICAL PROPERTIES (units)	AVERAGE VALUES <sup>(1)</sup>	TEST METHODS
Specific Gravity	1.22	ASTM D-792
Tensile Strength, machine direction (psi)	4500	ASTM D-638
Flexural Strength (psi)	7100	ASTM D-790
Flexural Modulus (10 <sup>3</sup> psi)	2.8	ASTM D-790
Hardness Rockwell Scale R	87	ASTM D-785
Impact Strength, Gardner Drop Dart (in-lbs)	> 160	ASTM D-5420
Heat Deflection Temperature @ 264 psi (°F)	165	ASTM D-648
Thermoforming Temperature Range Low (°F) High (°F)	340 380	Machine
Mold Shrinkage (in/in)	0.005-0.007	
Flammability Rating*: Motor Vehicle Standard Underwriters Lab	Passes Listed <sup>(2)</sup>	FMVSS 302 UL94 V-1
Surface Resistivity (ohm/sq)	≤ 10 <sup>5</sup>	ASTM D-257
Static Decay @ 15% Rh (sec)	≤ 2.0	EIA-541

(1) At 0.125"

(2) At 0.066" (1.68mm) and above

\* 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®**

### ROYALITE THERMOPLASTICS

a subsidiary of  
Uniroyal Technology Corporation  
2001 W. Washington Street / P.O. Box 1836  
South Bend, IN 46634-1836  
(219) 246-5000 • Fax: (219) 246-5200  
[www.royalite.com](http://www.royalite.com)