

## Royalite® ABS Sheet

### General Information

Royalite is an ABS plastic sheet that can be virtually anything you want to be. You can specify Royalite sheet with a range of properties that goes from extremely stiff and rigid to super flexible. You can specify maximum strength at high temperatures or lower temperatures. You can ask for almost any color, texture or finish you've ever seen . . . and some you haven't.

Royalite is the best economizer you ever had on a product line. It often replaces metal without sacrificing mechanical qualities and can pay a bonus in weight and cost. ABS sheet can replace wood and give you styling freedom you've never had before. The same thing goes for replacing other plastics. Royalite ABS sheet whips the hardness problems and appearance of acrylics, solves the brittleness problems of styrenes and gives you the dimen-

sional stability you can't get from polyethylenes.

Today, you can choose the precise properties your design and your products demand. You can have exceptional durability, light weight and cut costs with minimum-effort forming and fabricating.

Royalite sheet is readily available in an astonishing variety of colors, textures and finishes from quick-order warehouse stock and in custom blanks.

Royalite sheet is usually shipped on pallets, ready for processing. Sheet comes in sizes up to 54" x 94" and is usually available in eight thicknesses from .031 to .250. However, custom sheet can be extruded in widths up to 60 inches by 40 feet (or any greater length).

## ROYALITE®

### Thermo Plastic Selector Guide

PROPERTIES	POLYMER	ABS	ABS	ABS	ABS	ABS	ABS	PVC/ ACRYLIC	ABS/PVC	ABS/PVC	PVC/ ACRYLIC
GENERAL											
Foam Core		—	—	—	—	—	Yes	—	—	—	—
Composite Material		—	—	—	—	—	Yes	—	—	—	—
Flammability Rating*		—	—	—	—	—	—	—	—	—	—
per Test Method:	MVSS 302	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	UL94VO	—	—	—	—	—	—	Yes	Yes	Yes	Yes
	FAR 25.853B	—	—	—	—	—	—	Yes	Yes	—	Yes
	FAR 25.853A	—	—	—	—	—	—	—	—	—	Yes
Smoke Rating UMTA/DOT		—	—	—	—	—	—	—	—	—	—
Static Conductive		—	—	—	—	—	—	—	—	—	—
Also Suggested For Pressure Forming		—	—	—	—	—	—	—	—	Yes	Yes
RATING											
Weather Resistance		Low	Low	Low	Low	Low	Low	High	Low	Low	Good
Tensile Strength		Very high	High	High	Very high	High	High	High	High	High	High
Stiffness		Very high	High	High	Very high	High	Very high	Very high	High	High	Very high
Impact Strength		High	Very high	Very high	Very high	Very high	High	Very high	Very high	Very high	Very high
Hardness		Very high	Average	High	Very high	Average	Very high	Very high	High	High	Very high
High Temperature Performance		Very high	High	High	High	High	High	Average	Average	Average	Average
Low Temperature Performance		Average	High	High	Average	Very high	High	Average	Average	Average	Average
Formability		Excellent	Excellent	Excellent	Excellent	Excellent	Fair	Good	Good	Good	Excellent
PHYSICAL PROPERTIES											
Specific Gravity		1.04	1.03	1.03	1.04	1.02	0.70-0.85	1.35	1.17	1.22	1.33
Tensile Strength, machine dir.	(psi)	6000	4600	5100	6000	4400	2300	6000	5700	5700	5500
Flexural Strength @ 72°F	(psi)	9500	7200	8600	9000	6700	5000	9200	7500	7000	10,000
Flexural Modulus @ 72°F	(10 <sup>5</sup> psi)	3.1	2.3	2.7	3.1	1.8	2.3	3	2.5	2.6	3.0
Impact Strength, Notched Izod**											
@ 72°F	(ft-lb/in. notch)	5.0	10.0	7.0	7.5	8.0	—	15.0	7.0	5.0	8.0
@ -20°F	(ft-lb/in. notch)	2.0	4.5	3.0	3.5	4.5	—	1.0	2.0	1.5	1.0
Impact Strength, Gardner Drop Weight**											
(in.-lb) — Minimum Value		120	250	200	200	220	130	240	120	120	240
Hardness, Rockwell R		105	86	96	103	84	100	105	95	95	100
Compressive Strength	(psi)	—	—	—	—	—	850	—	—	—	—
Heat Deflection Temperature — Annealed											
@ 264 psi fiber stress	(°F)	225	203	203	200	209	200	165	185	185	165
Surface Resistivity	(Ohm/square)**	—	—	—	—	—	—	—	—	—	—
Volume Resistivity	(Ohm-cm)***	—	—	—	—	—	—	—	—	—	—
	Low (°F)	325	300	300	300	300	300	300	280	325	300
	High (°F)	400	375	375	375	375	365	350	350	375	350

Royalite® - Reg. TM Uniroyal Plastics Div., Polycast.

Over the last 40 years, Uniroyal — the inventor of ABS plastic — has demonstrated its unique leadership in the industry. We have provided significant design and cost benefits to our customers for an amazing number of applications.

Royalite thermoplastic sheet can be vacuum-formed or pressure-formed. It can replace metal, saving both cost and weight without sacrificing structural qualities. Royalite performs — and still meets a combination of fire rating, smoke rating, or static control requirements.

As a replacement for wood and fiberglass, it opens up endless design possibilities.

The Royalstat family of products is ideally suited for applications in work areas where dissipation of electrostatic charge is critical. It can combine clean room compatibility with a fire

rating of UL94V-0 in electrostatic applications such as IC chip carriers, trays, tray dividers, tote boxes, containers, storage bins and conductive table mats and floor mats.

Uniroyal's expertise and technology will keep right on giving direction to the entire industry. We provide a greater variety of thermoplastic sheet than anyone else in the world. Just consider the choices. The range of thermoplastic sheet is so wide you're sure to find the right material for almost any application.

The polymers available include ABS, PVC, ACRYLIC, ROVEL®, HDPE, and many proprietary polymer alloys in fire rated\*, smoke rated\*, weather resistant, and foam core constructions.

Use this Selector Guide as your key to the entire Royalite line.

ROYALSTAT STATIC CONTROL							WEATHER RESISTANT				
R62 ABS/PVC	R63 ABS/PVC	R64 HDPE	R65 ABS/PVC	R67 ABS	R68/63/68 PVC/ABS	R69 HDPE	R82 ROVEL	R82/21 ROVEL/ ABS	R87/59 PVC/ABS	R96 ACRYLIC	R98 KORAD/ ABS
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	Yes	—	—	Yes	Yes	—	Yes
Yes	Yes	—	Yes	Yes	Yes	—	Yes	Yes	Yes	Yes	Yes
Yes	Yes	—	Yes	—	Yes	—	—	—	Yes	—	—
Yes	Yes	—	Yes	—	Yes	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Yes	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Low	Low	Average	Low	Low	Low	Average	Very high	Very high	High	Very high	Very high
High	High	Low	High	Low	High	Low	High	High	High	High	High
Very high	High	Average	High	Very high	High	Average	High	High	High	High	High
High	High	High	High	Average	High	Very high	Very high	Very high	Very high	Average	High
High	High	Low	High	High	High	Low	Very high	Very high	High	High	Very High
Average	Average	Average	Average	Very high	Average	Average	High	High	Average	Average	High
Average	Average	Average	Average	Average	Average	Average	Very high	Very high	Average	Average	Average
Excellent	Good	Good	Good	Fair	Good	Good	Excellent	Excellent	Good	Excellent	Excellent
1.25	1.22	1.06	1.22	1.04	1.23	0.96	1.02	1.06	1.23	1.00	1.04
5000	5000	3950	5000	4000	5000	4100	5600	4400	3500	5000	5000
6700	5700	3200	5700	6500	5700	3300	7700	8650	7000	8000	8500
2.6	2.1	1.94	2.1	2.5	2.0	2.2	3.0	2.7	2.4	3.3	2.7
—	3.0	—	3.0	—	2.6	—	11.0	7.0	6.0	1.0	4.5
—	—	—	—	—	—	—	2.0	2.0	1.5	0.5	1.0
160	160	320	160	120	160	320	280	280	120	90	90
95	98	80	98	98	75	80	87	87	96	90	95
—	—	—	—	—	—	—	—	—	—	—	—
174	174	156	174	220	172	156	209	200	170	180	190
<10 <sup>11</sup>	<10 <sup>5</sup>	<10 <sup>5</sup>	<10 <sup>9</sup>	<10 <sup>6</sup>	<10 <sup>6</sup>	<10 <sup>9</sup>	—	—	—	—	—
—	<5x10 <sup>3</sup>	<5x10 <sup>6</sup>	10 <sup>4</sup> -10 <sup>7</sup>	<10 <sup>4</sup>	<10 <sup>4</sup>	—	—	—	—	—	—
310	310	280	310	340	310	280	250	300	290	310	300
360	360	350	360	400	360	350	350	375	350	370	375

## Colors and Finishes

Royalite offers the widest range of colors and surface textures in the industry.

Our unique technical capabilities give you unlimited design freedom in terms of colors, gloss levels and grains.

We offer you 970 standard colors in a choice of 23 grains (in fact, more than anyone else in the world). Our computerized color graphic department will do a complete color search and supply a recommended color match for your approval.

For minimal charge, we can also custom-color match to your precise requirements—often in just one week. You can depend on consistency from run to run—whether it's six months later or even two years later! Our color graphics department maintains a complete history on past color matchings.

Because Royalite can be capped it makes possible exceptional color and gloss control and better grain retention after thermoforming. The fact is: Royalite has excellent grain retention and the tightest color/gloss control in the industry. PSM will be glad to send you grain and color swatch samples.