

POLYCAST[®] UV-SC[™]

UV BLOCKING & SOLAR HEAT CONTROL CELL CAST ACRYLIC

Polycast UV-SC[™] is the latest addition to PolyOne's growing product line specifically targeting the transportation [aircraft, mass transit, automotive] and architectural markets. Polycast now has the technology to produce cast acrylic sheet in a variety of colors that block out significant amounts of the near-Infrared radiation [solar energy heat] *while maintaining high visible light transmission*. Polycast UV-SC[™] is the most practical and cost effective optical grade monolithic glazing product in the marketplace. This transparency breakthrough has a U.S. Patent Pending.

50% Heat Reduction
with comparable Light Transmission!



THE MATERIAL

- Aircraft-quality acrylic material
- Suitable for thermoforming
- Meets standard specifications for aircraft applications
- Can be supplied in a variety of color shades, from near-colorless to standard colors traditionally used for aircraft.

THE BENEFITS

- Full UV protection for pilots and aircraft interiors
- Cooler, more comfortable interiors, especially while on the ground (20° F cooler, or more)
- Lower cockpit temperatures may increase the service life of expensive electronic equipment.
- Higher visibility than traditional tinted materials.



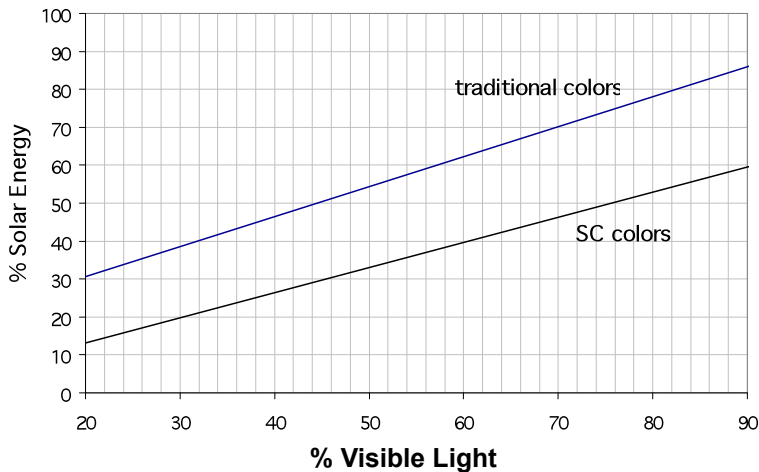
For additional information, please contact Polycast at (800) 243-9002;
polycast.marketing@polyone.com or visit our website at www.dss.polyone.com/polycast.

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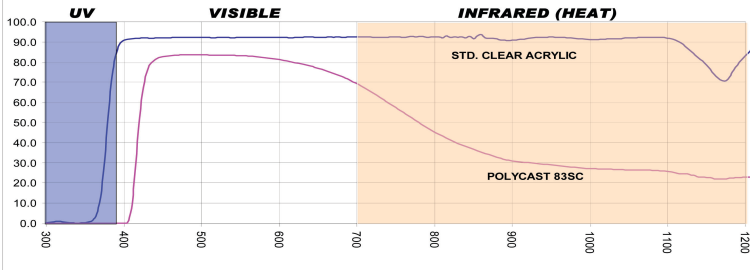
Charts

Solar energy vs. visible light transmission

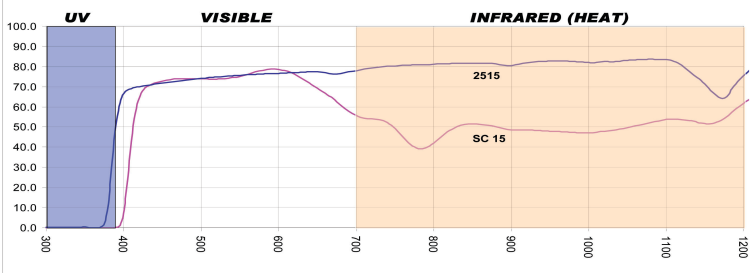


The graph displays the relationships between solar energy transmission and visible light transmissions for regular colors and SC colors.

83SC vs. Clear Acrylic



2515 vs. SC15



This spectral transmission graph shows the type of radiation allowed to pass through two glazing material comparisons; standard colorless acrylic and Polycast 83SC & SC15 and traditional 2515.

Note that both UV-SC materials transmit high amounts of visible light (400 to 700 nm), and **SC15** & **83SC** transmit much less radiation in the near-infrared (NIR) and in the UV. The NIR and UV regions contains significant amounts of solar energy but do not contribute to visibility.

Availability

Polycast UV-SC™ is a custom cell-cast acrylic sheet able to be manufactured to MIL-PRF 5425, 8184 and 25690, DTD-5592, L-P-391, ASTM D 4802 and others. Polycast UV-SC™ can also be manufactured for NVG [Night-Vision Compatibility].

Available in a wide range of colors and/or light transmissions.

Typical Properties

Properties	Test Method	Units	Data
Specific Gravity	ASTM D792	g/cc	1.19
Tensile Stress Yield	ASTM D638	psi	11,000
Flexural Modulus	ASTM D790	psi	450,000
DTUL, 264 psi	ASTM D648	Deg C	98
Burn Rate	ASTM D635	Inches per minute	< 2.5

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Polycast UV-SC[™] Target Markets & Applications



Aircraft for airplane windshields, cabin windows, helicopters [‘eyebrows’], seaplanes, or light and private aircraft.

Architectural for sunroom additions, outdoor living areas, traditional windows, security barriers, and skylights

Marine for boat windshields, marine windows and doors and hatch covers.

Heavy Construction Equipment for cab covers, windshields, and canopies

Recreational Vehicles for windshields, windows, external pop-outs, and skylights

Transportation for bus transit, rail and automotive transparent glazing applications.



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The following table shows examples of the heat reduction comparative improvement of SC colors compared to standard materials. **All SC colors reduce UV damage by 99%**

Color	% Visible Light	% Solar Energy	% Improvement
Clear Acrylic 83SC *	92 83	85 50	41
2111 Green SC11 Green *	77 72	75 45	40
2515 Gray SC15 Gray *	76 72	74 51	31
2256 Gray SC56 Gray *	65 65	66 47	29
2064 Gray SC64 Gray *	26 26	34 24	29
2082 Green SC82 Green *	65 60	58 40	31
2412 Bronze SC12 Bronze *	27 27	35 26	26
2538 Gray SC38 Gray *	16 15	26 15	42
2540 Bronze SC40 Bronze *	75 71	72 47	35
2074 Gray SC74 Gray *	13 13	23 13	43
2094 Gray SC94 Gray *	45 45	49 38	22
2537 Gray SC37 Gray *	32 32	41 27	34
2130 Green SC30 Green *	23 24	40 21	48
2370 Bronze SC70 Bronze *	10 10	16 13	19

* indicates special solar control properties. Colors not listed are available upon request.

UV-SC colors are available in a wide range of light transmissions.

** Solar Energy calculated using Lawrence Berkeley National Laboratory Optics v.5 software.

The actual temperatures in service will be dependent on the combination of many factors; such as weather conditions (including wind velocity) and type of application.



CELL CAST ACRYLIC

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