

Radel® R-7400

polyphenylsulfone

Radel® R-7300 (for light colors) and R-7400 (for darker colors) polyphenylsulfone resins were developed specifically for aircraft interior applications, and through the use of a proprietary flame retardant package, offer low heat release, low smoke generation, and low toxic gas emissions. These resins comply with the FAA regulation 14CFR Part 25.853 Appendix F. In addition, they have excellent impact resistance and ESCR when exposed to fluids typically used by the aerospace industry, reducing the need for annealing or protective films.

Radel® R-7300 and R-7400 resins have excellent flow characteristics, readily filling complex parts with thin walls or long flow lengths.

Chemical Resistance:

One of the outstanding characteristics of Radel® R-7300 and R-7400 resins is their resistance to many commonly used aviation fluids. Three test methods: unstressed immersion, stressed with a 5-inch radius curve, and stressed with a variable radius curve fixture, were employed to evaluate resistance of Radel® resins to Skydrol® LD-4; 1,1,1-trichloroethane; Jet fuel A; methyl ethyl ketone; toluene; isopropanol; and Skydrol® 500B.

- Available in various custom colors

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Chemical Resistant • Detergent Resistant • Flame Retardant • Good Processing Stability	• Good Toughness • High Flow • Low Smoke Emission • Low Toxicity
Uses	• Aerospace Applications • Aircraft Applications	• Aircraft Interiors
Agency Ratings	• FAA FAR 25.853a • FAA FAR 25.853d	• OSU 55/55
RoHS Compliance	• Contact Manufacturer	
Appearance	• Colors Available	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.36		ASTM D792
Melt Mass-Flow Rate (MFR) (380°C/2.16 kg)	16	g/10 min	ASTM D1238
Water Absorption (24 hr)	0.30	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	2790	MPa	ASTM D638
Tensile Strength	75.8	MPa	ASTM D638
Tensile Elongation (Break)	40	%	ASTM D638
Flexural Modulus	2760	MPa	ASTM D790
Flexural Strength	110	MPa	ASTM D790

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Impact	Typical Value	Unit	Test method
Notched Izod Impact	80	J/m	ASTM D256
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load 1.8 MPa, Unannealed	182	°C	ASTM D648
Flammability	Typical Value	Unit	Test method
OSU Peak Heat Release Rate ¹	< 55.0	kW/m ²	FAR 25.853(d)
OSU Total Heat Release - 2 min ¹	< 20.0	kW·min/m ²	FAR 25.853(d)
Smoke Density			ASTM F814
Dm @ 4 min ²	< 5.0	Ds	
Ds @ 1.5 min	1.0	Ds	

Additional Information

Materials intended for aircraft interior parts must meet stringent flammability requirements. Radel R-7300 and R-7400 resins meet or exceed all commercial and regulatory requirements for flammability, smoke density, heat release, and toxic gas emissions.

Injection	Typical Value	Unit
Drying Temperature	149	°C
Drying Time	4.0	hr
Rear Temperature	354 to 371	°C
Middle Temperature	360 to 377	°C
Front Temperature	366 to 382	°C
Nozzle Temperature	360 to 377	°C
Processing (Melt) Temp	366 to 388	°C
Mold Temperature	107 to 163	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

Notes

Typical properties: these are not to be construed as specifications.

¹ The flammability ratings are not intended to reflect hazards presented by these or any material under actual fire conditions.

² Industry Requirement: 50 - 100 Ds

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