

Radel® R-7625

polyphenylsulfone

Radel® R-7625 polyphenylsulfone resin is a cost-effective solution for aircraft interior applications that offers improved UV resistance versus Radel® R-7535 and Radel® R-7558. The product complies with the FAA regulation 14CFR Part 25 Appendix F, offering vertical burn resistance, very low smoke generation and, through the use of proprietary additives, low heat release values, when tested using the

Ohio State University (OSU) rate of heat release method. It also generates low flaming-mode toxic gas emissions.

Radel® R-7625 resin is available in light colors and is formulated for integrally colored applications.

- Available in several custom colors

General

Material Status	• Commercial: Active
Availability	• North America
Features	<ul style="list-style-type: none"> • Detergent Resistant • Flame Retardant • Good Flow • Good Processing Stability • Good Toughness • Low Smoke Emission • Low Toxicity
Uses	<ul style="list-style-type: none"> • Aerospace Applications • Aircraft Applications • Aircraft Interiors
Agency Ratings	<ul style="list-style-type: none"> • FAA FAR 25.853a • FAA FAR 25.853d
RoHS Compliance	• Contact Manufacturer
Appearance	• Colors Available
Forms	• Pellets
Processing Method	• Injection Molding

Physical

	Typical Value	Unit	Test method
Specific Gravity ¹	1.36		ASTM D792
Melt Mass-Flow Rate (MFR) (380°C/2.16 kg)	17	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.60 to 0.80	%	ASTM D955
Water Absorption (24 hr)	0.30	%	ASTM D570

Mechanical

	Typical Value	Unit	Test method
Tensile Modulus	2830	MPa	ASTM D638
Tensile Strength	86.2	MPa	ASTM D638
Tensile Elongation (Break)	30	%	ASTM D638
Flexural Modulus	2760	MPa	ASTM D790
Flexural Strength	121	MPa	ASTM D790

Impact

	Typical Value	Unit	Test method
Notched Izod Impact	69	J/m	ASTM D256

Thermal

	Typical Value	Unit	Test method
Deflection Temperature Under Load 1.8 MPa, Unannealed	193	°C	ASTM D648

Flammability

	Typical Value	Unit	Test method
OSU Peak Heat Release Rate ²	< 55.0	kW/m ²	FAR 25, AppF
OSU Total Heat Release - 2 minute ²	< 20.0	kW·min/m ²	FAR 25, AppF
Smoke Density - Dmax @ 4 minutes ²	< 5.0		FAR 25, AppF

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Flammability	Typical Value	Unit	Test method
Vertical Burn - 60 second ²			FAR 25, AppF
Drip Burn Time	No Drip	sec	
Flame Time	0.0	hr	
Length	< 7.62	cm	

Injection	Typical Value	Unit
Drying Temperature	166 to 177	°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	

Injection Notes

Drying:

- Radel R-7625 resin must be thoroughly dried prior to melt processing. Incomplete drying will result in defects in molded parts ranging from surface streaks to severe bubbling. Pellets can be dried using shallow trays placed in a circulating air oven or in a desiccating hopper dryer. Recommended minimum drying conditions are 4 hours at 149°C (300°F). Drying at 165°C to 177°C (330°F to 350°F) is preferable.

Injection Molding:

- Radel R-7625 resin can be readily injection molded in most screw injection machines. A general purpose screw with a 2 to 3:1 compression ratio is recommended, as is minimum back pressure. Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures in the range of 107°C to 163°C (225°F to 325°F) are suggested. Melt temperature should generally range from 336°C to 388°C (690°F to 730°F).
- Caution: Exceeding 415°C (780°F) during processing may cause degradation.

Notes

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

¹ Varies with resin color.

² Flammability test results are not intended to reflect hazards presented by these or any other material under actual fire conditions.

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