

# Radel® R-7159

## polyphenylsulfone

Radel® R-7159 polyphenylsulfone (PPSU) was developed specifically for aircraft interior applications. 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 in the Ohio State University (OSU) rate of heat release method. It also generates low flaming-mode toxic gas emissions.

This resin offers good resistance to most fluids found in the aviation industry and is available in a natural color that is designed to accept aircraft paint systems for aesthetic parts. The painting function enhances the chemical resistance of the polymer and provides the final step in color coordination.

- Natural: Radel® R-7159 NT 50

### General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• 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	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

### Physical

	Typical Value	Unit	Test method
Specific Gravity	1.35		ASTM D792
Melt Mass-Flow Rate (MFR) (380°C/2.16 kg)	22	g/10 min	ASTM D1238

### Mechanical

	Typical Value	Unit	Test method
Tensile Modulus	2280	MPa	ASTM D638
Tensile Strength (Yield)	74.5	MPa	ASTM D638
Tensile Elongation (Break)	30 to 50	%	ASTM D638
Flexural Modulus	2480	MPa	ASTM D790
Flexural Strength	101	MPa	ASTM D790

### Impact

	Typical Value	Unit	Test method
Notched Izod Impact	130	J/m	ASTM D256

### Thermal

	Typical Value	Unit	Test method
Deflection Temperature Under Load 1.8 MPa, Unannealed	200	°C	ASTM D648

### Flammability

	Typical Value	Unit	Test method
OSU Peak Heat Release Rate <sup>1</sup>	< 55.0	kW/m <sup>2</sup>	FAR 25, AppF
OSU Total Heat Release - 2 min <sup>1</sup>	< 20.0	kW·min/m <sup>2</sup>	FAR 25, AppF
Smoke Density - Dmax @ 4 min <sup>1</sup>	< 5.0	Ds	FAR 25, AppF

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Flammability	Typical Value Unit	Test method
Toxic Gas Emissions <sup>1</sup>		BSS 7239/ATS 1000/ABD 0031
CO	< 10 ppm	
HCL	< 1 ppm	
HCN	< 1 ppm	
HF	< 1 ppm	
NO+NO <sub>2</sub>	< 1 ppm	
SO <sub>2</sub>	< 1 ppm	
Vertical Burn - 60 second <sup>1</sup>		FAR 25, AppF
Drip Burn Time	No Drip	
Flame Time	0.0 hr	
Length	< 7.62 cm	

Injection	Typical Value Unit
Drying Temperature	149 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

## Notes

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

<sup>1</sup> Flammability test results are not intended to reflect hazards presented by these or any other material under actual fire conditions.

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