Radel® R-7159 NT50
polyphenylsulfone

Radel® R-7159 NT50 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.

The material offers good resistance to most fluids found in the aviation industry. It is available in pigmented grades to match OEM color standards and in a natural-color grade that is designed to accept aircraft paint systems for aesthetic parts. Painting enhances the chemical resistance of the polymer and provides the final step in color coordination.

- Natural: Radel® R-7159 NT50

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 • Paintable
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
Density / 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

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

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

Flammability	Typical Value	Unit	Test method
OSU Peak Heat Release Rate [1]	< 55.0	kW/m²	FAR 25, AppF
OSU Total Heat Release - 2 min [1]	< 20.0	kW·min/m²	FAR 25, AppF
Smoke Density - Dmax @ 4 min [1]	< 5.0	Ds	FAR 25, AppF
Toxic Gas Emissions [1]			BSS 7239/ATS 1000/ABD 0031
CO	< 10	ppm	
HCL	< 1	ppm	
HCN	< 1	ppm	
HF	< 1	ppm	
NO+NO2	< 1	ppm	
SO2	< 1	ppm	
Vertical Burn - 60 second [1]			FAR 25.853
Drip Burn Time	No Drip		
Flame Time	0.0	sec	
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.

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

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