

Radel® R-7159

Polyphenylsulfone

Solvay Specialty Polymers

Message:

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 Information			
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	Nominal Value	Unit	Test Method
Specific Gravity	1.35	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (380°C/2.16 kg)	22	g/10 min	ASTM D1238
Mechanical	Nominal 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	Nominal Value	Unit	Test Method
Notched Izod Impact	130	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed)	200	°C	ASTM D648
Flammability	Nominal Value	Unit	Test Method
OSU Peak Heat Release Rate ¹	< 55.0	kW/m ²	FAR 25, AppF
OSU Total Heat Release - 2 min ²	< 20.0	kW · min/m ²	FAR 25, AppF
Smoke Density - Dmax @ 4 min ³	< 5.0	Ds	FAR 25, AppF
Toxic Gas Emissions ⁴			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 ⁵			FAR 25, AppF
Drip Burn Time	No Drip		
Flame Time	0.0	hr	
Length	< 7.62	cm	
Injection	Nominal 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		
NOTE			
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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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519
Phone: +86 13424755533
Email: sales@su-jiao.com
No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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