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.

Colors available:

- Natural: Radel R-7159 NT 50

General			
Material Status	• Commercial: Active		
Availability	• North America		
Features	• Good Flow • Good Toughness	• High Heat Resistance • Hydrolytically Stable	• Low Smoke Emission • Low Toxicity
Uses	• Aircraft Interiors		
Agency Ratings	• FAA 14 CFR Part 25 App. F		
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		

Physical	Typical Value	Unit	Test Method
Specific Gravity	1.35	g/cm³	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	133	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	kW/m²	FAR 25, AppF
OSU Total Heat Release - 2 min [1]	< 20	kW·min/m²	FAR 25, AppF
Smoke Density - Dmax @ 4 min [1]	< 5	Ds	FAR 25, AppF

Flammability	Typical Value	Unit	Test Method
Toxic Gas Emissions [1]			BS 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, AppF
Drip Burn Time	No Drip	sec	
Flame Time	0.00	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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For assistance with an emergency involving products of Solvay Advanced Polymers, such as a spill, leak, fire, or explosion, call day or night:

Emergency Health Information

USA +1.800.621.4590
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Emergency Spill Information

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Europe +44 208.762.8322 (CARECHEM)
China +86.10.5100.3039
All other Asian countries +65.633.44.177

For additional product information, technical assistance, and Material Safety Data Sheets (MSDS), call:

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Material Safety Data Sheets (MSDS) for products of Solvay Advanced Polymers are available upon request from your sales representative or by emailing us at advancedpolymers@solvay.com. Always consult the appropriate MSDS before using any of our products.

Property values for individual batches will vary within specification limits. Unless otherwise noted, values shown are typical for uncolored resin; colorants may alter values. For Preliminary Data Sheets, values are typical of limited production and specifications are not yet established.

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