Radel® R-7700

Polyphenylsulfone

Solvay Specialty Polymers

Message:

Radel® R-7700 polyphenylsulfone sheet was developed specifically for aircraft interior applications. Through the use of a proprietary flame retardant package, this resin offers low heat release, low smoke generation and low toxic gas emissions, thereby complying with the FAA regulation 14CFR Part 25.853 Appendix F. In addition, it has excellent impact resistance and meets typical industry requirements for resistance to aerospace fluids, even under stress.
Radel® R-7700 is available in pellets and sheet form.
Radel® R-7700 sheet can be formed into large complex geometries with relative ease on conventional thermoforming equipment. Please reference the Technical Bulletin Thermoforming Radel® R-7700 Sheet for additional information.
Available in several custom colors

General Information	
Features	Low smoke Low toxicity Good processing stability Detergent resistance Good toughness Flame retardancy
Uses	Airplane trim Aircraft applications Aerospace applications
Agency Ratings	AAMA 303 FAA FAR 25.853a OSU 55/55
RoHS Compliance	Contact manufacturer
Appearance	Available colors
Forms	Particle Sheet
Processing Method	Extrusion Sheet extrusion molding Thermoforming Profile extrusion molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.34 - 1.42	g/cm³	ASTM D792
Water Absorption (24 hr)	0.35	%	ASTM D570

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (3.18 mm)	2280	MPa	ASTM D638
Tensile Strength (3.18 mm)	58.6	MPa	ASTM D638
Tensile Elongation (Break, 3.18 mm)	15	%	ASTM D638
Flexural Modulus (3.18 mm)	2340	MPa	ASTM D790
Flexural Strength (3.18 mm)	100	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (3.18 mm)	130	J/m	ASTM D256
Unnotched Izod Impact (3.18 mm)	No Break		ASTM D256
Dart Drop Impact (3.18 mm)	> 31.1	J	BS 7271
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed, 3.18 mm)	202	°C	ASTM D648
Flammability	**Nominal Value**	**Unit**	**Test Method**
Toxic gas emission			
Nitrogen gasAt 4 minutes [1]		ppm	
Hydrogen fluoride [2]		ppm	
Sulfur oxide, 4 minutes [3]	3	ppm	
Hydrogen chloride [4]		ppm	
Hydrogen cyanide, 4 minutes [5]		ppm	
Carbon monoxide, 4 minutes [6]	40	ppm	
exothermic			Ohio State University
2 minutes: 1.52 to 3.18mm [7]		kW·min/m²	Ohio State University
Peak rate: 1.52 to 3.18mm [8]		kW/m²	Ohio State University
Smoke Density			ASTM F814
specific optical density, at 1.5 minutes [9]	1.0	Ds	ASTM F814
Maximum specific optical density, at 4 minutes [10]	3.0	Ds	ASTM F814

Additional Information

The Federal Aviation Admininstration (FAA) has issued stringent regulations covering materials for use in commercial aircraft interiors. As shown in the Heat Release and Smoke Density data above, Radel R-7700 sheet complies with these regulations.In addition, several airframe manufacturers have an additional requirement that, when these materials burn, any smoke generated contain no more than defined levels of specific toxic gases. Radel R-7700 polyphenylsulfone sheet typically exhibits levels of these gases that are much lower than the maximum levels allowed, see Toxic Gas Emission data above.

NOTE	
1.	Combustion mode; BMS specification limit = 60 ppm; ATS 1000.001 specification limit = 100 ppm
2.	Combustion mode; BMS specification limit = 60 ppm;ATS 1000.001 specification limit = 50 ppm
3.	Combustion mode: BMS specification limit = 30 ppm; ATS 1000.001 specification limit = 100 ppm

4.	Combustion mode; BMS specification limit = 60 ppm; ATS 1000.001 specification limit = 500 ppm
5.	Combustion mode; BMS specification limit = 60 ppm; ATS 1000.001 specification limit = 150 ppm
6.	Combustion mode: BMS specification limit = 500 ppm;ATS 1000.001 specification limit = 3500 ppm
7.	FAA requirements, 14CFR PART 25.853 Appendix F: 65 KW-min/m^2
8.	FAA requirements, 14CFR PART 25.853 Appendix F: 65 KW/m^2
9.	Burning mode
10.	Burning mode; FAA industry requirements: 200

Recommended distributors for this material

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