

A-104 P, A-304 P, A-704 P

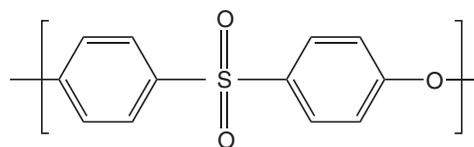
RADEL A-104 P, RADEL A-304 P, and RADEL A-704 P are grades of polyethersulfone offered in a granular, powder form. This powder form possesses distinct advantages when dissolving or dispersing into solutions, grinding to smaller particle size, coating via melt processes, or blending with other solid particles.

These high heat capable resins offer excellent toughness and durability, along with outstanding chemical resistance including resistance to steam, boiling water and mineral acids. Cast films or coatings of Radel A resin are transparent and have additional desirable properties including long term thermal stability, excellent metal adhesion and formability, and inherent flame resistance.

These PES grades represent a range of molecular weights. These molecular weights correlate directly to their bulk solution or melt viscosities, and go from low viscosity, with Radel A-704 P, to high viscosity, with Radel A-104 P.

Typical applications where these are used include, high temperature coating formulations, advanced high temperature composites, and specialty adhesives.

The basic repeat unit is:



Typical Properties of RADEL A-104 P, A-304 P, A-704 P Resin

Properties	ASTM Test Method	Typical Values ⁽¹⁾			
		U.S. Customary units		SI units	
		Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	12.5	kpsi	86	MPa
Tensile Modulus	D 638	400	kpsi	2.8	GPa
Tensile Elongation at yield	D 638	6.5	%	6.5	%
Tensile Elongation at break	D 638	30-60	%	30-60	%
Flexural Strength	D 790	17.5	kpsi	121	MPa
Flexural Modulus	D 790	400	kpsi	2.8	GPa
Compressive Strength	D 695	16.0	kpsi	110	MPa
Compressive Modulus	D 695	232	kpsi	1.6	GPa
Notched Izod Impact Strength	D 256	1.3	ft-lb/in	70	J/m
Thermal					
Glass Transition Temperature	E-1356	428	°F	220	°C
Deflection Temperature ⁽²⁾ at 264 psi (1.82 MPa)	D 648	399	°F	204	°C
Coefficient of Linear Thermal Expansion	D 696	27	ppm/°F	49	ppm/°C
General					
Specific Gravity	D 792	1.37		1.37	
Water Absorption, 24 hours	D 570	0.6	%	0.6	%
Water Absorption, 30 days		2.0	%	2.0	%
Reduced Viscosity (1% in dimethylformamide)					
A-104 P		0.47-0.49	dl/g	0.47-0.49	dl/g
A-304 P		0.40-0.42	dl/g	0.40-0.42	dl/g
A-704 P		0.35-0.37	dl/g	0.35-0.37	dl/g

(1) Actual properties of individual batches will vary within specification limits. Properties are typical of uncolored resins. Colorants or other additives may alter properties.

(2) Measured on annealed 0.125 in. (3.2 mm) thick specimens.

Drying

RADEL A-104 P, A-304 P, and A-704 P resins will usually not need to be dried prior to use in coatings, adhesives, and advanced composite matrix applications. If you want to dry the material, contact your Solvay Advanced Polymers' representative for instructions.

Injection Molding

RADEL A-104 P, A-304 P, and A-704 P resins are not intended for injection molding. Injection molding grades of RADEL A PES are available. Contact your Solvay representative or visit our website for more information.

Standard Packaging and Labeling

RADEL A-104 P, A-304 P, and A-704 P resins are packaged in cardboard boxes containing 25 kg (55.115 pounds) of material. Special packaging can be supplied upon request. Individual packages will be plainly marked with the product number, the lot number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of RADEL A-104 P, A-304 P, and A-704 P polyethersulfone resins, labeling used on containers is as follows:

Caution! Handling and/or processing this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557

1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590

1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300

**1 (703) 527-3887 outside of U.S.
collect calls accepted**

For Additional Information

Technical Service

1 (800) 621-4557

Customer Service

1 (800) 848-9744

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