

Aquivion® P87S-SO₂F

perfluorosulfonyl fluoride

Aquivion® P87S-SO₂F are chemically-stabilized (denoted by the S-suffix) perfluorinated pellets in the sulfonyl fluoride (-SO₂F) form that exhibit an Equivalent Weight (EW) of 870 g/eq. This material is based on the unique Short Side Chain copolymer of Tetrafluoroethylene (TFE) and Sulfonyl Fluoride Vinyl Ether (SFVE) F₂C=CF-O-CF₂CF₂-SO₂F produced by Solvay.

Aquivion® P87S-SO₂F resin can be easily melt extruded into a variety of shapes. The extruder should be equipped with a standard three-zone metering screw devoid of barrier or mixing elements. Optimum temperature settings will depend on the configuration of the equipment, but generally range from 200 to 300°C.

Optionally, functional groups in the molded part are then hydrolyzed in baths or wet benches with a heated base (NaOH, KOH etc) reaction which may take minutes or hours, depending on thickness and conditions.

Aquivion® P87S-SO₂F can be directly hydrolyzed as described, either completely or only on their outer surface. This will enable functional activity of the sulfonic acid / sulfonyl salt groups for ion-exchange operations or as an acid catalyst.

Like other fluoropolymers, Aquivion PFSA pellets are corrosive in the melt; therefore, all parts having prolonged contact with the melt should be made with corrosion-resistant materials such as Hastelloy®, Inconel®, Monel® or Xaloy®. Chrome or nickel plating is not recommended since they are typically only sufficient for brief processing tests.

Please visit Aquivion.com for more information.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Appearance	• Translucent
Forms	• Pellets

Physical

	Typical Value	Unit	Test method
Melt Mass-Flow Rate (MFR) ¹			ASTM D1238
270°C/2.16 kg	5.0 to 20	g/10 min	
280°C/5.0 kg	15 to 50	g/10 min	
Density	2.08	g/cm ³	ASTM D792
Equivalent Weight (EW) ²	840 to 900	g/eq	Internal Method

Thermal

	Typical Value	Unit	Test method
Melting Temperature	230 to 250	°C	ASTM D3418
Crystallization Heat	230 to 250	°C	ASTM D3418
Heat of Fusion	8 to 10	°C	ASTM D3418

Additional Information

	Typical Value	Unit	Test method
Drying Temperature - in vacuum oven	105	°C	
Drying Time	20.0	hr	
Thermal Resistance ³	350	°C	TGA

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HEALTH, SAFETY AND ENVIRONMENT

- Aquivion® pellets are not harmful if used and handled according to standard processing procedures (see for example "The Guide to the Safe Handling of Fluoropolymer Resins" issued by the Society of the Plastics Industry). If handled inappropriately, pellets may release harmful toxic chemicals. Please refer to corresponding Material Safety Data Sheets for more information on handling and safety.

PACKAGING, SHIPMENT AND STORAGE

- Aquivion® pellets are delivered in standard polypropylene bottles and drums. Products should be kept closed in their original packaging.
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Notes

Typical properties: these are not to be construed as specifications.

¹ Nominal value

² eq = (mol SO₂F)

³ In air, ramped 10°C/min