

Aquivion® P98-SO₂F

Perfluorosulfonyl Fluoride

Solvay Specialty Polymers

Message:

Aquivion® P98-SO₂F are perfluorinated pellets in the sulfonyl fluoride (-SO₂F) form that exhibit an Equivalent Weight (EW) of 980 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® P98-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.

| General Information | | | |
|--|---------------|-------------------|-----------------|
| Appearance | Translucent | | |
| Forms | Particle | | |
| Physical | Nominal Value | Unit | Test Method |
| Melt Mass-Flow Rate (MFR) ¹ | | | ASTM D1238 |
| 270°C/2.16 kg | 5.0 - 20 | g/10 min | ASTM D1238 |
| 280°C/5.0 kg | 15 - 50 | g/10 min | ASTM D1238 |
| Equivalent (EW) ² | 940 - 1020 | g/eq | Internal method |
| Density | 2.080 | g/cm ³ | ASTM D792 |
| Heat of crystallization | 8.00 - 10.0 | J/g | ASTM D3418 |
| Heat of Fusion | 8.00 - 10.0 | J/g | ASTM D3418 |
| Drying Time | 20.0 | hr | |
| Thermal Resistance ³ | 350 | °C | TGA |
| Drying temperature-in vacuum oven | 105 | °C | |
| Thermal | Nominal Value | Unit | Test Method |
| Melting Temperature | 230 - 250 | °C | ASTM D3418 |
| Additional Information | Nominal Value | Unit | Test Method |

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, membranes 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.

| NOTE | |
|------|----------------------------|
| 1. | Nominal value |
| 2. | eq = mol SO ₃ H |
| 3. | In air, ramped 10°C/min |

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