

Aquivion® PW87S

perfluorosulfonic acid

Aquivion® PW87S is a coarse, acid powder based on the short-side-chain (SSC) copolymer of Tetrafluoroethylene and the Sulfonyl Fluoride Vinyl Ether (SFVE)

$\text{CF}_2=\text{CF}-\text{O}-(\text{CF}_2)_2-\text{SO}_2\text{F}$ produced by Solvay. The resulting perfluoropolymer's functional groups are in their sulfonic acid form, SO_3H . Aquivion® PW87S is chemically-stabilized (denoted by the S-suffix).

Aquivion® PW87S exhibits ionic exchange capacity and it can be used as is under conditions where conventional exchange resins have shown insufficient chemical resistance.

Due to its superacid functionality with many active groups, it can be used either directly or as an ingredient of composite structures active as a heterogeneous catalyst. This

encompasses a wide range of organic syntheses and respective reaction mechanisms.

PW87S is a good trade-off between polymer crystallinity and ionic exchange capacity. It is insoluble in water, acid or bases and in most solvents unless extreme conditions would be applied.

Furthermore, Aquivion® PW87S can be dissolved in some organic solvents to produce ion exchange capacity membrane. Proper organic solvents are dipolar aprotic such as N-ethyl-2-pyrrolidone (NEP) and dimethyl sulfoxide. To facilitate the dissolution slightly increase the temperature to 50-60°C.

Please visit Aquivion.com for more information.

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General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Appearance	• White
Forms	• Powder

Physical	Typical Value	Unit	Test method
Equivalent Weight (EW) ¹	840 to 900	g/eq	Internal Method
Total Acid Capacity	1.11 to 1.19	meq/g	Internal Method
Water Content	5.0	wt%	

Additional Information

HEALTH, SAFETY AND ENVIRONMENT

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

Notes

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

¹ eq = (mol SO₃H)