

Aquivion® D83-06A

perfluorosulfonic acid

Aquivion® D83-06A is a perfluorosulfonic acid (PFSA) ionomer dispersion that exhibits an Equivalent Weight (EW) of 830 g/eq. Polymer concentration is 6%. percent. Solvent system is 20% water, 40% 1-propanol, and 40% 2-propanol.

Aquivion® PFSA dispersions are based on the unique Short Side Chain copolymer of Tetrafluoroethylene (TFE) and Sulfonyl Fluoride Vinyl Ether (SFVE) $F_2C=CF-O-CF_2CF_2-SO_2F$ produced by Solvay. The PFSA ionomer dispersions contain its acid form (-SO₃H) and are

available in various solvent systems, EWs and concentrations.

These dispersions can be used to produce PEM fuel cell electrodes and electrochemical cell electrodes, to manufacture or repair ion exchange membranes, to produce super-acid catalysts, and for the surface treatment of PTFE membranes to improve wetting behavior.

Please visit Aquivion.com for more information.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America

Physical	Typical Value Unit	Test method
Density (25°C)	0.875 g/cm ³	Internal Method
Equivalent Weight (EW) ¹	810 to 850 g/eq	Internal Method
HSE/Transport Classification	Flammable	
Polymer Concentration	6 %	TGA
Solvent System	20% Water, 40% 1-Propanol , 40 % 2-Propanol	
Solvent Water Content	25 %	
Total Acid Capacity	1.17 to 1.23 meq/g	Internal Method
Viscosity (25°C)	80 to 100 mPa·s	ASTM D2196

Flammability	Typical Value Unit
Flammability - at ambient conditions	Yes

Additional Information

HEALTH, SAFETY AND ENVIRONMENT

- Aquivion® PFSA dispersions 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 (e.g. overheating above 260°C (500°F) for extended period of time) the dispersions may release harmful toxic chemicals. By their chemical properties Aquivion® PFSA dispersion grades are classified as hazardous material subject to transportation regulations (ADR, IATA, IMDG). D83-06A is flammable whereas D83-24B and D79-20BS are corrosive (R-SO₃H being a strong acid, measured pH < 2). Please refer to corresponding Material Safety Data Sheets for more information on handling and safety.

PACKAGING, SHIPMENT AND STORAGE

- Aquivion® PFSA D83-06A and D83-24B are available in 0.5, 5 and 60 liter containers (D79-20BS: 0.25 liter). It is recommended to store the product at 25 °C (77 °F) in a clean temperature-controlled and well ventilated environment, protected from direct sunlight and other sources of heat or irradiation. Containers should be kept tightly closed to avoid solvent evaporation. D83-06A shall be kept away from sparks, flames or other possible source of ignition.

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Notes

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

¹ eq = mol SO₃H