



Aquivion® N+ 125D/251.612

Syensqo - Perfluorosulfonic Acid

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General Information

Product Description

Aquivion® N+ 125D/251.612 is a perfluorosulfonic acid ionomer dispersion that exhibits an Equivalent Weight (EW) of 790 g/eq. Polymer concentration is 25%. Solvent system is >99% water and is free of ethers.

The product is based on Syensqo's sustainable technology for a new generation of high-quality Aquivion®. It is made without fluorinated processing aids.

Aquivion® N+ 125D/251.612 is particularly suitable for electrode binder applications of Fuel Cell systems. It can also be used for manufacturing RedoxFlow battery membranes, supported or not by ePTFE or woven reinforcements.

Aquivion® dispersions are based on the unique Short Side Chain copolymer of Tetrafluoroethylene (TFE) and a Sulfonyl Fluoride Vinyl Ether (SFVE) F2C=CF-OCF2CF2-SO2F produced by Syensqo. The perfluorosulfonic acid ionomer dispersions contain its acid form (R-SO3H) and are available in various EWs. Aquivion® dispersions can be formulated with a variety of solvents (alcohols and dipolar aprotic organic solvents).

General

Generic Name	• Perfluorosulfonic Acid
Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Forms	• Liquid

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Equivalent Weight (EW) ²	790	g/eq	Internal Method
HSE/Transport Classification	Corrosive		
Polymer Concentration - nominal	25 %w/w		TGA
Solvent System	99 %w/w Water, free of ethers.		
Viscosity - (25°C, 100 rpm)	< 20	mPa·s	ASTM D2196
Flammability	Nominal Value	Unit	Test Method
Flammability - at ambient conditions	No		
Optical	Nominal Value	Unit	Test Method
APHA Color	50		ASTM D1209
Additional Information	Nominal Value	Unit	Test Method
Dispersion Available Acid Capacity	> 280	meq/kg	Internal Method

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 Resins¹ 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). Specifically N+ 125D/251.612 is 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® N+ 125D/251.612 is available in 5 and 69 kg or 5 and 60 liter containers. It is recommended to store the product between 5 and 50°C 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.

Shelf-life declaration

The shelf life of Aquivion® dispersions is at least 2 years from the quality control date reported in the certificate of analysis. The shelf life is ensured only if the product is kept in its original sealed container and stored in the recommended conditions.

The polymer is not going to be chemically degraded over time. You could observe the consequence of water evaporation (higher dry content, polymer sedimentation, ...) if the original container is left open.

Notes

¹ Typical properties: these are not to be construed as specifications.

² eq = mol SO₃H
