Eata Battery

Self-Humidifying PEM (SH-PEM-25)

Catlog Number: FCEM-0063

Description

A 25μm PFSA membrane with embedded hygroscopic nanoparticles (e.g., SiO2/ZrO2) for fuel cell operation under low relative humidity conditions.

Basic Information

Polymer/Material Base: PFSA + SiO2/ZrO2

Ion Exchange Capacity (IEC): 1.10 meq/g

Ionic Conductivity (S/cm): 0.08 - 0.12 (at 30% RH)

Thickness (μm): 25 - 28

Tensile Strength (MPa): 45 - 65

Elongation at Break (%): 150 - 200

Water Uptake (%): 40 - 60

Swelling Ratio (%): < 12

Max Operating Temp (°C): 100

Chemical Stability (Fenton's Test): High

Density (g/cm³): 2.02

Ash Content (%): < 2.0

Volatile Content (%): < 1.5

EW (Equivalent Weight): 950 - 1050

Glass Transition Temp (Tg): 155

Storage Humidity (%): 30 - 60

Storage Temp (°C): 15 - 30

Solubility in Polar Solvents: Insoluble

Ionic Resistance (Ω·cm²): 0.08

Dimensional Stability (%): < 8

Thermal Stability (TGA): > 300°C

Flammability Rating: UL94 V-0

Surface Roughness (Ra): < 0.4 μm

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