

Anhydrous Proton Conducting Film (A-PEM-50)

Catlog Number: FCEM-0080

• Description

A 50 μ m composite membrane containing imidazole-functionalized silica particles, allowing for proton conduction under completely dry conditions.

• Basic Information

Polymer/Material Base: PFSA + Im-SiO₂

Ion Exchange Capacity (IEC): 1.20 - 1.40 meq/g

Ionic Conductivity (S/cm): 0.05 - 0.08 (at 120°C)

Thickness (μ m): 50 - 55

Tensile Strength (MPa): 45 - 65

Elongation at Break (%): 120 - 180

Water Uptake (%): 10 - 20 (Dry)

Swelling Ratio (%): < 3

Max Operating Temp (°C): 140

Chemical Stability (Fenton's Test): Excellent

Density (g/cm³): 1.98

Ash Content (%): < 3.0

Volatile Content (%): < 1.0

EW (Equivalent Weight): 800 - 900

Glass Transition Temp (T_g): 175

Storage Humidity (%): 0 - 30

Storage Temp (°C): 15 - 30

Solubility in Polar Solvents: Insoluble

Ionic Resistance (Ω -cm²): 0.15

Dimensional Stability (%): < 4

Thermal Stability (TGA): > 300°C

Flammability Rating: V-0

Surface Roughness (Ra): < 0.3 μ m

 For Research or Industrial Raw Materials, Not For Personal Medical Use!