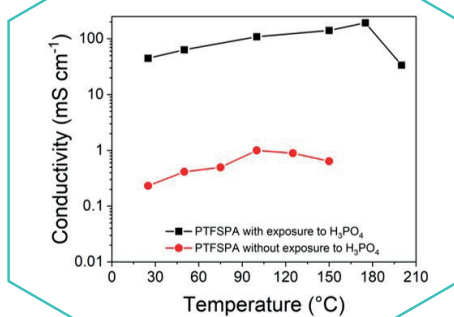
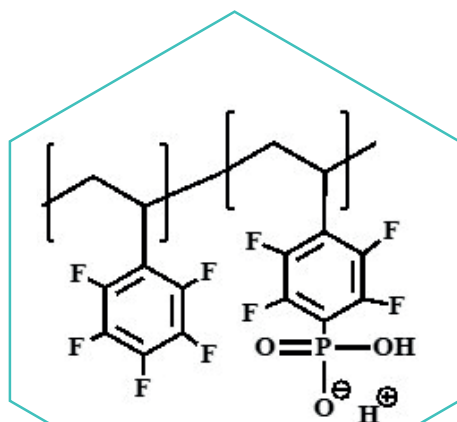
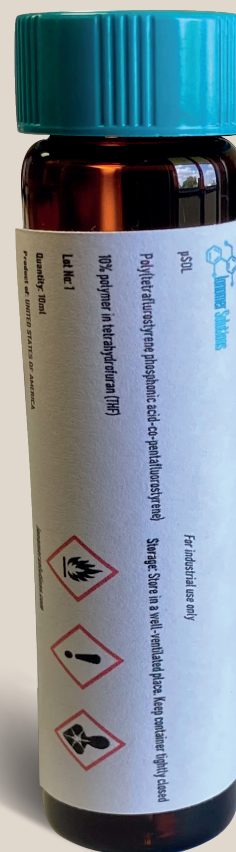




Leaders in high-temperature ionomers and porous ionic conductors

pSOL – high-temperature electrode ionomer binder



pSOL is a high-temperature electrode binder based upon a phosphonic acid ionomer chemistry.

pSOL conducts protons at high-temperatures without humidification and has excellent stability at 200 °C (*) in electrochemical devices.



Leaders in high-temperature ionomers and porous ionic conductors

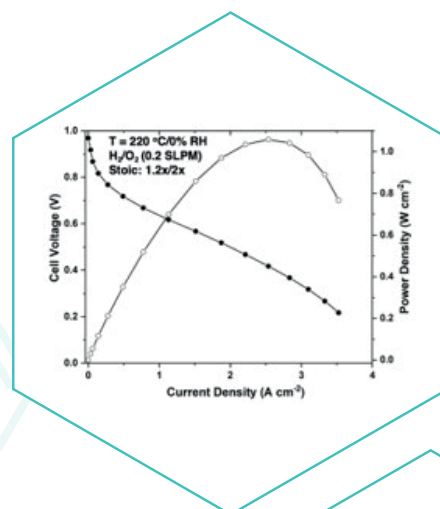
iPEM and pSOL performance in devices

pSOL displays good fuel cell performance when paired with iPEM, a high-temperature polymer electrolyte membrane. Additionally, iPEM and pSOL were demonstrated in an electrochemical hydrogen pump for purifying hydrogen from gas mixtures with large CO content (40 mol% - i.e., syngas).

Electrode ionomer binder

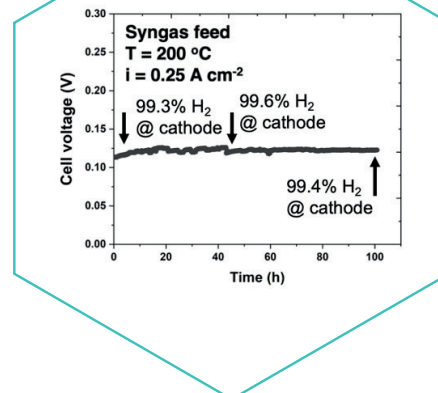
Binder type	Phosphonic acid ionomer
Description	5 wt% in ethanol

- Venugopalan, G.; Arges, C. G. et al, ACS Applied Energy Materials 2020, 3 (1), 573.
- Venugopalan, G.; Arges, C. G. et al., Materials Advances 2021, 2 (13), 4228.
- Venugopalan, G.; Arges, C. G. et al ACS Energy Letters 2022, 7 (4), 1322.
- U.S. Utility Patent 17/046,611, International PCT 221205-2240, U.S. Provisional Patent 63/19,2607



Fuel cell data: Gas diffusion electrodes with 0.4 mgPt cm⁻² in the anode and 0.6 mgPt cm⁻² in the cathode. 10 wt% pSOL binder in each electrode.

Electrochemical hydrogen pump data for purifying hydrogen from syngas (25% H₂ in 40% CO). Gas diffusion electrodes with 1 mgPt cm⁻² and 30 wt% pSOL binder in each electrode.



* Based on longevity testing of 100 hours

For all product related inquiries, please contact us at:

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