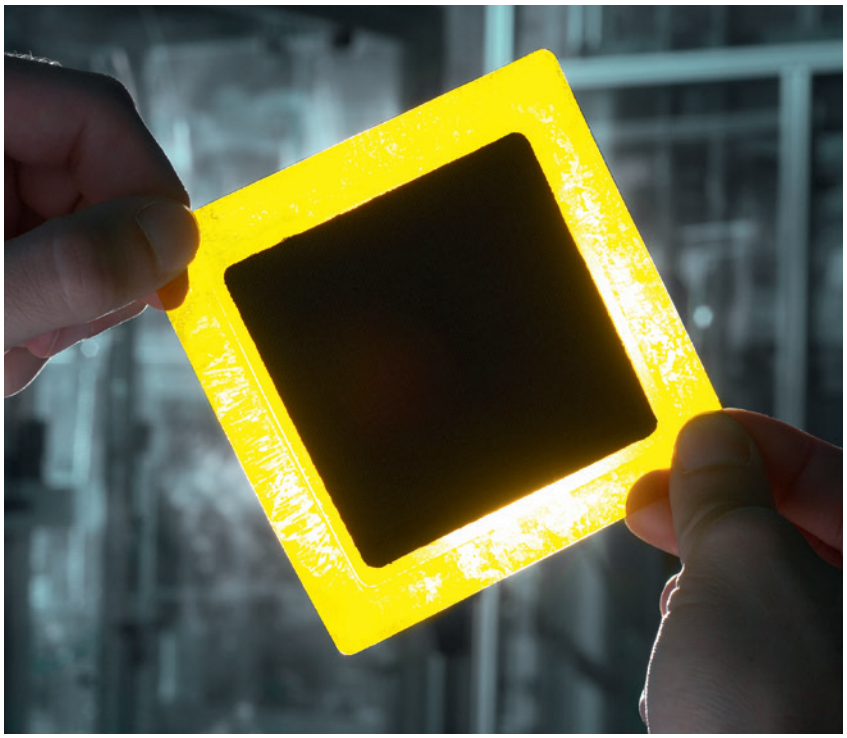
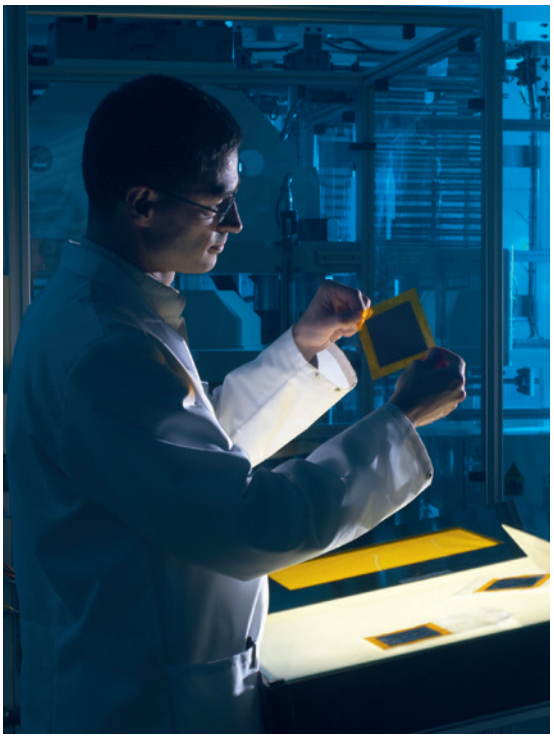
Celtec®-P membrane electrode assemblies for high-temperature PEM fuel cells





Celtec®-P membrane electrode assemblies

BASF offers a membrane electrode assembly (MEA) for high-temperature PEM fuel cells. This MEA operates at temperatures between 120 and 180 °C and can tolerate large concentrations of carbon monoxide as well as being able to run independently of humidification. This technology enables fuel cell systems to become simpler and more cost effective.

MEA designs

BASF offers standard MEA designs as well as tailored, customized MEAs:

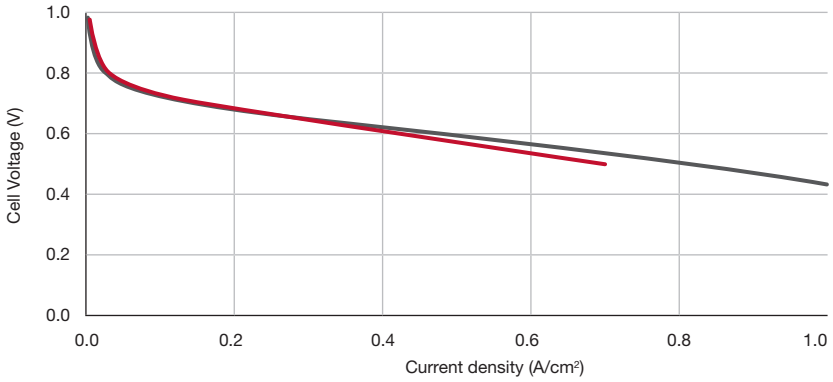
- Celtec®-P MEA 45 cm²
- Celtec®-P MEA 165 cm²
- Celtec®-P MEA 300 cm²
- Celtec®-P MEA 605 cm²

BASF
We create chemistry

Applications and properties of Celtec®-P MEA

Applications	Properties
Backup power	Based on polybenzimidazole and phosphoric acid
Combined heat, power and cooling	Operating temperature 120 to 180 °C
Auxiliary power units	High carbon monoxide tolerance
Battery range extender	No humidification necessary Long-term stability > 20,000 h (in lab)

Performance

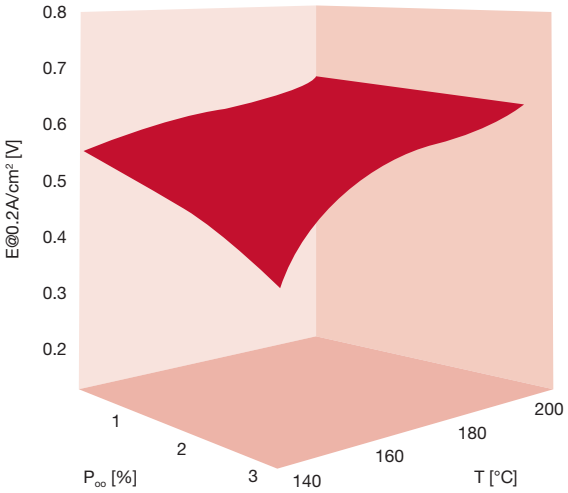


hydrogen/air (1.2/2.0) @ 160°C

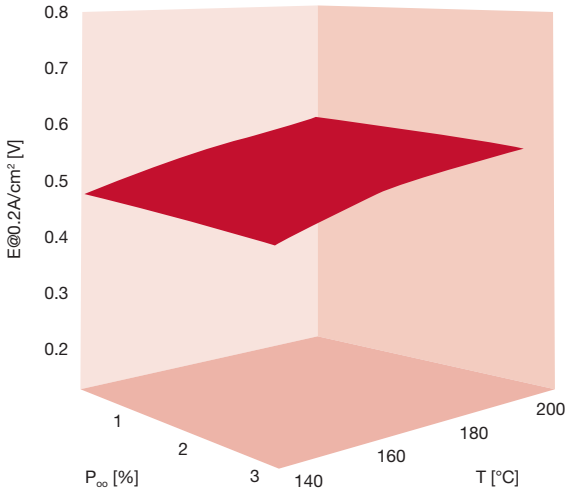
reformate/air (1.4/5.0) @ 180°C

Test conditions
Single cell 45 cm²
No humidification
Ambient pressure
Steam reformate: 70% H_2, 29% CO_2, 1% CO

High CO tolerance enables simplified purification



Performance is robust against changes in humidification



Want to know more? Please contact us:

Europe
Dr. Carsten Henschel
Phone: +49 621 60-47866
Mobile: +49 172 6608868
carsten.henschel@basf.com

USA
Raj Agrawal
Phone: +1 346-252-4225
Mobile: +1 832-451-8291
rajat.agrawal@basf.com

Japan
Yoshifumi Takemoto
Phone: +81 3 3796-5273
Mobile: +81 90 9541-6161
yoshifumi.takemoto@basf.com

Korea
Han Yu
Phone: +82 2 3707-3125
Mobile: +82 10 2829-1346
han.yu@basf.com

China
Pearl Chen
Phone: +886 2 2518 7678
Mobile: +886 972 328112
pearl.chen@basf.com

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