

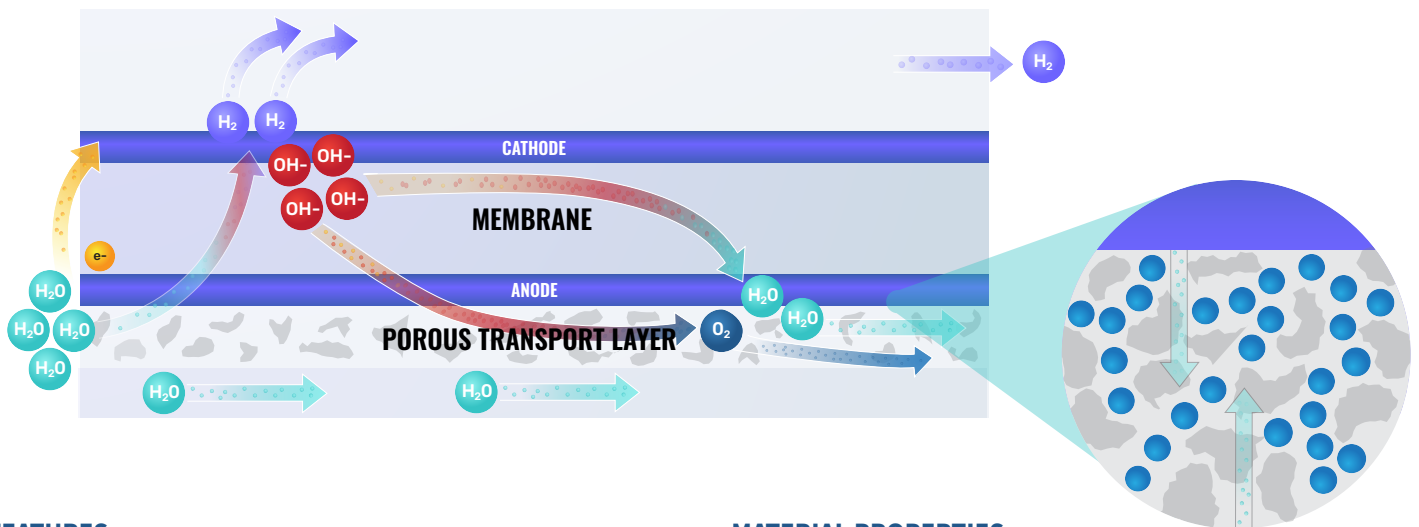
# FELTMETAL™

## POROUS TRANSPORT LAYER (PTL)

Technetics is taking over 50 years of experience manufacturing FELTMETAL™ products for the Aerospace industry and “transporting” it over to Green Hydrogen. Through partnerships with universities and industry partners we are developing a variety of Porous Transport Layer materials to meet the needs of various applications.

### POROUS TRANSPORT LAYER

A Porous Transport Layer is the layer in an Electrolyzer stack that allows for the removal of oxygen gas from water during the Electrolysis process. It must also provide good electrical conductivity and operational stability over time.

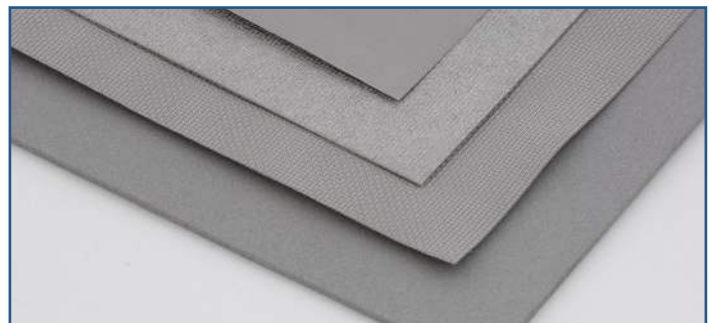


### FEATURES

- Voltage required to produce 1A/cm<sup>2</sup> (refer to specification table).
- Low contact and ohmic resistance.
- Low variation in steady-state (operational stability) response over time.
- Can tailor porosity and thickness to your application needs (find the right balance between “bubble” removal and contact resistance; length of diffusion and mechanical strength).
- Smooth surface allows for better contact with catalyst layer.
- Longer life in highly corrosive environment compared to carbon paper.

### MATERIAL PROPERTIES

- Material: 347 Stainless Steel, Hastelloy-X, FeCrAlY (please contact us for other material options)
- Density: Any density between 18% and 75%
- Minimum Thickness: 0.007 [180 microns]
- Gradient (2-layer) density materials in development.



## SPECIFICATIONS

### FELTMETAL™ POROUS TRANSPORT LAYER (PTL)

PTL Type	Material	Thickness*	Porosity*	Pore Size (μm)	Voltage	Current Density	Current Density	Contact Resistance	Electical Resistivity
		(mm [in])	(%)		@ 1A/cm <sup>2</sup> (V)	@ 1.8V (A/cm <sup>2</sup> )	@2.0V (A/cm <sup>2</sup> )	@50N/cm <sup>2</sup> (Ohms*cm <sup>2</sup> )	(mOhm*cm)
PTL1966 515C	Hastelloy-X	~0.28 [0.011]	35-40	10-30	1.64	1.96	3.53	0.19	0.92
PTL1967 HX-2	Hastelloy-X	~0.50 [0.020]	55-60	>10	1.74	1.21	2.19	-	-
PTL1968 SS-3	347 Stainless	~.27 [0.011]	35-40	>4	1.80	1.00	1.78	-	-
PTL1969 HXG-2-C	Hastelloy-X	~0.18 [0.007]	Gradient	5-15	1.65	1.98	3.48	0.19	0.68
PTL1970 HX-1	Hastelloy-X	~0.95 [0.037]	75-80	>15	1.75	1.22	2.48	0.35	2.66
PTL1971 SS-1	347 Stainless	~.82 [0.034]	75-80	>15	1.85	0.82	1.61	1.20	2.82

\*Thickness and porosity tested, not manufacturing capability limits

