

1 **S2 Table.** Oxygen diffusion, mass transport coefficient and permeability of the membrane
 2 separators in water at 298 K.^a

Membrane or separator	k_o / 10⁻³ cm s⁻¹	D_o /10⁻⁵ cm² s⁻¹	P_M / 10⁻⁶ mg l⁻¹ s⁻¹ cm⁻² Pa
Nafion	2.79	5.1	4.38
Rhinohide	2.44	16.3	4.52
Tyvek	2.62	3.82	4.61
Carbon paper (wet proofed)	3.73	11.2	8.62
ETFE-g-PSSA D.O.G. 23%	2.54	4.16	5.01
ETFE-g-PSSA D.O.G. 35%	2.17	1.43	8.2
HDPE-g-PSSA D.O.G. 11%	2.46	0.957	4.83
PVDF Copolymer-g-PSSA D.O.G. 10%	2.79	3.2	4.24
PVDF-g-PSSA D.O.G. 34%	2.74	1.23	4.25

3 ^a None of the Scimat separators could be analyzed due to water leakage.

4