

Polypyrrole version 2004.03 - Performance Summary

Property	Polypyrrole v.2003.03 in 0.1 M TEAP in PC ²	Mammalian Skeletal Muscle ¹
Activation Potential	2 V amplitude	-
Displacement (Strain)	2 % (at 10 MPa)	20 %
Max. Active Stress (Load)	40 MPa	0.35 MPa
Velocity (Strain Rate)	3 %/s (at 5 MPa)	100 %/s
Power to mass	150 W/kg	50-100 W/kg
Strain to charge	$1.3 \times 10^{-10} \text{ m}^3/\text{C}$	-
Efficiency	0.6 % (at 4 MPa) 3 % (at 30 MPa) 18 % (with energy recovery)	30 - 35 %
Stiffness (wet)	0.2 to 0.8 GPa	0.3 to 80 MPa (contracted)
Tensile Strength (wet)	120 MPa	0.3 MPa
Conductivity	$4.5 \times 10^4 \text{ S/m}$	-
Lifetime	10^5 (at 0.3 %)	10^9



¹Hunter I. et. al., *Technical Digest IEEE Solid State Sensors and Actuators Workshop*, 1992.

²Madden et. al., in press.

Activation solution was 0.1 M tetraethylammonium hexafluorophosphate in propylene carbonate