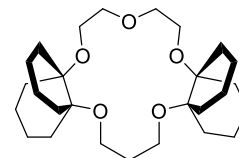


Product Information



71745 Sodium ionophore IV

(DD-16-C-5, 2,3:11,12-Didecalino-16-crown-5)

Selectophore®, function tested

Electrochemical Transduction

Ion-Selective Electrodes

Application 1 and Sensor Type¹

Assay of Na⁺ activity human intracellular fluid with solvent polymeric membrane electrodes based on Sodium Ionophore IV. This ionophore shows an extremely high selectivity for Na⁺ over K⁺.

Recommended Membrane Composition

- 3.0 Sodium Ionophore IV ([71745](#))
- 0.3 Potassium tetrakis(4-chlorophenyl)borate ([60591](#))
- 65.6 Bis(1-butylpentyl) adipate ([02150](#))
- 2.0 Tris(2-ethylhexyl) phosphate ([93299](#))
- 29.1 Poly(vinyl chloride) high molecular weight ([81392](#))

Recommended Cell Assembly

Ag, AgCl | 3 M KCl || 0.3 M NH₄NO₃ || sample solution || liquid membrane | 0.1 M NaCl | AgCl, Ag

Electrode Characteristics and Function

Selectivity coefficients $\log K_{Na,M}^{Pot}$ as obtained by the separate solution method (0.1 M solutions of the chlorides).

$\log K_{Na,K}^{Pot}$	-3.0	$\log K_{Na,Cs}^{Pot}$	-4.0
$\log K_{Na,Cs}^{Pot}$	-3.1	$\log K_{Na,Ca}^{Pot}$	-4.0
$\log K_{Na,NH_4}^{Pot}$	-3.3	$\log K_{Na,Mg}^{Pot}$	-4.2
$\log K_{Na,Rb}^{Pot}$	-3.7	$\log K_{Na,Ba}^{Pot}$	-4.3
$\log K_{Na,Sr}^{Pot}$	-3.9		

Lifetime:	$\log P_{TLC}^{a)}$ ionophore	11.8
Detection limit:		3·10 ⁻⁴ M Na ⁺ in human intracellular fluid
		8·10 ⁻⁶ M Na ⁺ without interfering ions

^{a)} lipophilicity, determined by thin-layer chromatography²

¹ Design and Synthesis of Sodium Ion-Selective Ionophores Based on 16-Crown-5 Derivatives for an Ion-Selective Electrode. K. Suzuki et al., Anal. Chem. 68, 208 (1996).

