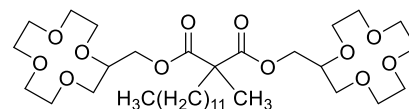


## Product Information



### 71739 Sodium ionophore VI

(Bis[(12-crown-4)methyl] dodecylmethylmalonate)  
Selectophore®, function tested

## Electrochemical Transduction

### Ion-Selective Electrodes

#### Application 1 and Sensor Type<sup>1,2</sup>

Assay of Na<sup>+</sup> activity with solvent polymeric membrane electrodes based on Sodium Ionophore VI.

#### Recommended Membrane Composition

- 6.50 wt% Sodium Ionophore VI ([71739](#))
- 66.70 wt% 2-Nitrophenyl octyl ether ([73732](#))
- 26.80 wt% Poly(vinyl chloride) high molecular weight ([81392](#))

#### Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.01 M NaCl | AgCl, Ag

#### Electrode Characteristics and Function

Selectivity coefficients  $\log K_{Na,M}^{Pot}$  as obtained by the mixed solution method.

$\log K_{Na,Li}^{Pot}$	-3.0	$\log K_{Na,Mg}^{Pot}$	-3.7
$\log K_{Na,K}^{Pot}$	-2.0	$\log K_{Na,Ca}^{Pot}$	-3.7
$\log K_{Na,NH_4}^{Pot}$	-3.0		

Slope of linear regression: 53 mV/dec  
Response time: 90% response time <5 min

### Coated Wire Electrodes

#### Application 1 and Sensor Type<sup>3,4</sup>

Determination of sodium activity with Coated Wire Electrode based on Sodium Ionophore VI.

#### Cocktail Composition

- 3.20 wt% Sodium Ionophore VI ([71739](#))
- 64.30 wt% 2-Nitrophenyl octyl ether ([73732](#))
- 32.50 wt% Poly(vinyl chloride) high molecular weight ([81392](#))

The components are dissolved in 3 ml THF to prepare the coating solution.



## Electrode Characteristics and Function

Selectivity coefficients  $\log K_{Na,M}^{Pot}$  as obtained by the mixed solution method.

$\log K_{Na,K}^{Pot}$	-2.0	$\log K_{Na,Ca}^{Pot}$	-4.0
$\log K_{Na,Rb}^{Pot}$	-2.0	$\log K_{Na,Mg}^{Pot}$	-4.0
$\log K_{Na,Cs}^{Pot}$	-1.5	$\log K_{Na,Sr}^{Pot}$	-4.0
$\log K_{Na,NH_4}^{Pot}$	-2.2	$\log K_{Na,Ba}^{Pot}$	-3.7
$\log K_{Na,Li}^{Pot}$	-3.0		

Slope of linear regression: 53 mV/dec ( $10^{-4}$  to  $10^{-1}$  M Na<sup>+</sup>)

<sup>1</sup> Sodium-selective PVC Membrane Electrodes Based on Bis(12-crown-4)s. T. Shono, M. Okahara, I. Ikeda, K. Kimura, H. Tamura, J. Electroanal. Chem. 132, 99 (1982).

<sup>2</sup> Simultaneous Determination of Sodium and Potassium in Human Urine or Serum Using Coated-wire Ion-selective Electrodes Based on Bis(crown ether)s. H. Tamura, K. Kumami, K. Kimura, T. Shono, Mikrochim. Acta 2, 287(1983).

<sup>3</sup> Coated wire sodium- and potassium-selective electrodes based on bis(crown ether) compounds. H. Tamura, K. Kimura, T. Shono, Anal. Chem. 54, 1224 (1982).

<sup>4</sup> Simultaneous Determination of Sodium and Potassium in Human Urine of Serum Using Coated-wire Ion-selective Electrodes Based on Bis(crown ether)s. H. Tamura, K. Kumami, K. Kimura, T. Shono, Microchim. Acta 2, 287 (1983).

