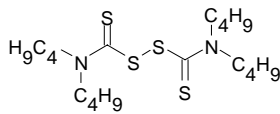


## Zinc



### Zinc ionophore I

(Tetra-n-butyl thiuram disulfide)

$C_{18}H_{36}N_2S_4$  M, 408.76 [1634-02-2]

[96491](#) **Selectophore<sup>®</sup>, function tested** 100 mg

## Electrochemical Transduction

### Ion-Selective Electrodes

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

Assay of Zn<sup>2+</sup> activity in aqueous solution with solvent polymeric membrane electrode based on Zinc ionophore I.

#### Recommended Membrane Composition

5.36	wt%	Zinc ionophore I ( <a href="#">96491</a> )
53.62	wt%	2-Nitrophenyl octyl ether ( <a href="#">73732</a> )
0.80	wt%	Potassium tetrakis(4-chlorophenyl)borate ( <a href="#">60591</a> )
40.22	wt%	Poly(vinyl chloride) high molecular weight ( <a href="#">81392</a> )

#### Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.001 M ZnCl<sub>2</sub> | AgCl, Ag

#### Electrode Characteristics and Function

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

$\log K_{Zn, Mg}^{Pot}$	-3.14	$\log K_{Zn, Co}^{Pot}$	-1.48
$\log K_{Zn, Ca}^{Pot}$	-2.83	$\log K_{Zn, Ni}^{Pot}$	-1.42
$\log K_{Zn, Mn}^{Pot}$	-2.08	$\log K_{Zn, Cu}^{Pot}$	0.96
$\log K_{Zn, Pb}^{Pot}$	0.78	$\log K_{Zn, K}^{Pot}$	-3.77
$\log K_{Zn, Fe}^{Pot}$	-2.42	$\log K_{Zn, NH_4}^{Pot}$	-3.24
$\log K_{Zn, Na}^{Pot}$	-3.28		

Slope of linear regression: 28.0 mV (10<sup>-6</sup> to 10<sup>-1</sup> M Zn(NO<sub>3</sub>)<sub>2</sub>)

Practical pH measuring range: 3.5-6.5 (pH 10 when adjusted with NH<sub>4</sub>Cl/NH<sub>3</sub> buffer)

Detection limit: 4.2•10<sup>-7</sup> M Zn<sup>2+</sup>

Response time: 2-10 s

<sup>1</sup> R. Kojima, S. Kamata, Zinc-Selective Membrane Electrodes Using Tetrabutyl Thiuram Disulfide Neutral Carrier. **Anal. Sci.** **10**, 409 (1994).