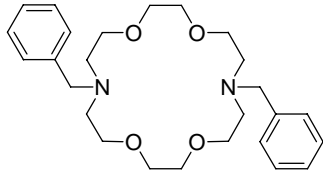


## Mercury



### Mercury ionophore I

(1,10-Dibenzyl-1,10-diaza-18-crown-6)

$C_{26}H_{38}N_2O_4$

$M_r$  442.59

[69703-25-9]

[39075](#)

Selectophore®

50 mg, 250 mg

## Electrochemical Transduction

### Ion-Selective Electrodes

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

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

#### Recommended Membrane Composition

4.5	wt%	Mercury ionophore I ( <a href="#">39075</a> )
37.9	wt%	Dibutyl butylphosphonate ( <a href="#">38479</a> )
0.8	wt%	Sodium tetraphenylborate (NaTPB) ( <a href="#">72018</a> )
56.8	wt%	Poly(vinyl chloride) high molecular weight ( <a href="#">81392</a> )

#### Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.1 M Hg(NO<sub>3</sub>)<sub>2</sub> | AgCl, Ag

#### Electrode Characteristics and Function

Selectivity coefficients  $\log K_{Hg, M}^{Pot}$  as obtained by the fixed interference method (10<sup>-2</sup> M of interfering ions). The membranes were dipped in a solution of 0.5 M Hg<sup>2+</sup> for 3 days.

	With superscript	Without superscript
$\log K_{Hg, Na}^{Pot}$	0.23	-1.77
$\log K_{Hg, K}^{Pot}$	0.85	-1.55
$\log K_{Hg, NH_4}^{Pot}$	0.70	-1.30
$\log K_{Hg, Ag}^{Pot}$	1.28	-0.72
$\log K_{Hg, Ca}^{Pot}$	-1.47	-1.47
$\log K_{Hg, Sr}^{Pot}$	-1.51	-1.51
$\log K_{Hg, Cu}^{Pot}$	-1.72	-1.72
$\log K_{Hg, Ni}^{Pot}$	-1.51	-1.51
$\log K_{Hg, Cd}^{Pot}$	-1.20	-1.20
$\log K_{Hg, Co}^{Pot}$	-1.10	-1.10
$\log K_{Hg, Pb}^{Pot}$	-1.49	-1.50
$\log K_{Hg, Fe}^{Pot}$	-2.12	-2.46
$\log K_{Hg, Al}^{Pot}$	-2.28	-2.60
$\log K_{Hg, Cr}^{Pot}$	-2.52	-2.85

Slope of linear regression: 29.0±0.5 mV/dec (3.1•10<sup>-5</sup> to 1.0•10<sup>-1</sup> M Hg<sup>2+</sup>)

Practical pH measuring range: 2.1-4.5

Response time: 15 s

Lifetime: 4 months

<sup>1</sup> V.K. Gupta, S. Chandra, S. Agarwal, Mercury selective electrochemical sensor based on a double armed crown ether as ionophore. **Indian Journal of Chemistry** **42A**, 813 (2003).