Product Information

24894 Chloride ionophore III
(ETH 9033; 3,6-Didodecylxyloxy-4,5-dimethyl-o-phenylene-bis(mercury chloride)
Selectophore®, function tested

Electrochemical Transduction
Ion-selective Electrodes

Application 1 and Sensor Type
Assay of Cl⁻ activity with solvent polymeric membrane electrode based on Chloride ionophore III.

Recommended Membrane Composition
2.0 wt% Chloride ionophore III (24894)
1.2 wt% Tridodecylmethylammonium chloride (91661)
63.8 wt% Bis(2-ethylhexyl) sebacate (84818)
33.0 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 \( \log K^\text{Pot}_{i,j} \) as obtained by the separate solution method (0.1 M of the solutions of the sodium salts at 22°C).

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\begin{align*}
\log K^\text{Pot}_{\text{Cl},\text{Br}} & = -1.4 \\
\log K^\text{Pot}_{\text{Cl},\text{C}l} & = -1.7 \\
\log K^\text{Pot}_{\text{Cl},\text{SCN}} & = -0.3 \\
\log K^\text{Pot}_{\text{Cl},\text{Stearate}} & = -0.1 \\
\log K^\text{Pot}_{\text{Cl},\text{CIO}_4} & = -4.5 \\
\log K^\text{Pot}_{\text{Cl},\text{NO}_3} & = -6.7 \\
\log K^\text{Pot}_{\text{Cl},\text{OA}} & = -6.3 \\
\log K^\text{Pot}_{\text{Cl},\text{F}} & = -6.6 \\
\log K^\text{Pot}_{\text{Cl},\text{ClO}_4} & = -4.8 \\
\log K^\text{Pot}_{\text{Cl},\text{HPO}_4} & = -6.9 \\
\log K^\text{Pot}_{\text{Cl},\text{SO}_4} & = -6.4
\end{align*}
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Slope of linear regression: -56.9±1.2 mV/dec (10⁻⁵ to 10⁻¹ M NaCl)
Response time: 90% response time: 15.8 s (10⁻² to 10⁻¹ M), 10.0 s (10⁻¹ to 2·10⁻³ M)


The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.