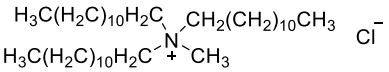
# Product Information



## **91661** Tridodecylmethylammonium chloride

(Methyltridodecylammonium chloride)
Selectophore®, function tested

## Electrochemical Transduction

### Ion-selective Electrodes

**Application 1 and Sensor Type[1]**

Assay of $Cl^-$ activity with solvent polymeric membrane electrode based on Tridodecylmethylammonium chloride with improved performance.

**Recommended Membrane Composition**

| | |
|---|---|
| 16.70 wt% | Tridodecylmethylammonium chloride (91661) |
| 41.70 wt% | Dipentyl phthalate (80154) |
| 8.30 wt% | Dodecylbenzenesulfonic acid (44199) |
| 33.30 wt% | Poly(vinyl chloride) high molecular weight (81392) |

**Recommended Cell Assembly**

Reference (e.g. Ag, AgCl, 0.0033 M KCl) | 0.0001 M $KNO_3$ || sample solution || liquid membrane | 0.003 M KCl | AgCl, Ag

**Electrode Characteristics and Function**

Selectivity coefficients $\log K_{Cl,X}^{Pot}$.

| | | | |
|---|---|---|---|
| $\log K_{Cl,HCO_3}^{Pot}$ | -1.70 | $\log K_{Cl,SO_4}^{Pot}$ | -1.62 |
| $\log K_{Cl,HPO_4}^{Pot}$ | -1.08 | $\log K_{Cl,OAc}^{Pot}$ | <-1.35 |

Slope of linear regression: -52 mV/dec ($10^{-2}$ to $5 \cdot 10^{-4}$ M $Cl^-$)

# Ion-selective Field Effect Electrodes

## Application 1 and Sensor Type[2,3]

Determination of chloride with a chloride selective field-effect transistor (ISFET). The gate membrane is based on an "Urushi" matrix with good durability.

### Recommended Membrane Composition

50.00 wt% Tridodecylmethylammonium chloride (91661)
50.00 wt% Urushi latex

### Electrode Characteristics

Selectivity coefficients $\log K_{Cl,X}^{Pot}$.

| | | | |
|---|---|---|---|
| $\log K_{Cl,HCO_3}^{Pot}$ | -1.6 | $\log K_{Cl,Br}^{Pot}$ | -0.2 |
| $\log K_{Cl,HPO_4}^{Pot}$ | -1.6 | $\log K_{Cl,\mathrm{SCN}}^{Pot}$ | 2.2 |
| $\log K_{Cl,\mathrm{SO_4}}^{Pot}$ | -1.2 | | |

Slope of linear regression: -51 mV/dec ($10^{-4}$ to 1 M $Cl^-$)

[1] Incorporation of dodecylbenzenesulfonic acid in a poly(vinyl chloride) matrix chloride ion-selective membrane based on tertiary ammonium.S. Nomura, Analyst 120, 503 (1995).
[2] Urushi matrix sodium, potassium, calcium and chloride-selective field- effect transistors. S. Wakida, M. Yamane, K. Higashi, K., Hiiro, Y. Ujihira, Sensors and Actuators B1, 412 (1990).
[3] A novel Urushi matrix chloride ion-selective field effect transistor. S. Wakida, M. Yamane, K. Hiiro, Talanta 35, 326 (1988).