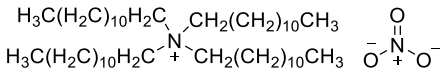
Product Information



87252 Tetradodecylammonium nitrate

Selectophore®, function tested

Electrochemical Transduction

Ion-selective Field Effect Transistors

Application 1 and Sensor Type[1]

Assay of NO_3^- activity in real aqueous matrices (river or lake water and aqueous soil extracts) with nitrate-sensitive ion-selective field-effect transistors based on a polymer membrane containing Tetradodecyl-ammonium nitrate as ion-exchanger.

Recommended Membrane Composition

4.00 wt%	Tetradodecylammonium nitrate (87252)
32.00 wt%	Poly(vinyl chloride) high molecular weight (81392)
64.00 wt%	Bis(2-ethylhexyl) sebacate (84818)

Electrode Characteristics and Function

Selectivity coefficients $\log K_{NO_3,X}^{Pot}$ as obtained by the mixed solution method (0.01 M of the interfering ions, except $H_2PO_4^-$ 0.025 M and OH^- 0.005 M).

$\log K_{NO_3,Cl}^{Pot}$	-2.9	$\log K_{NO_3,HCO_3}^{Pot}$	-3.3
$\log K_{NO_3,NO_2}^{Pot}$	-1.7	$\log K_{NO_3,OAc}^{Pot}$	-2.2
$\log K_{NO_3,Br}^{Pot}$	-1.2	$\log K_{NO_3,OH}^{Pot}$	-1.8
$\log K_{NO_3,H_2PO_4}^{Pot}$	-2.6	$\log K_{NO_3,B_4O_7}^{Pot}$	-3.4
$\log K_{NO_3,SO_4}^{Pot}$	-3.8		

Slope of linear regression:	-51.9±0.5 mV at 25°C ($2.5 \cdot 10^{-5}$ to $3.6 \cdot 10^{-2}$ M NO_3^-)
Detection limit:	10^{-5} M NO_3^-
Repeatability of measurements in linear range (as pooled standard deviation):	2.7%
Response time:	≤25 s
Lifetime:	≥ 2 months

[1] Sensitive membrane ISFETs for nitrate analysis in waters. L. Campanello, C. Colapicchioni, R. Crescenti M.P. Sammartino, Y. Su, M. Tomassetti, Sens. Actuators B26-27, 329 (1995).