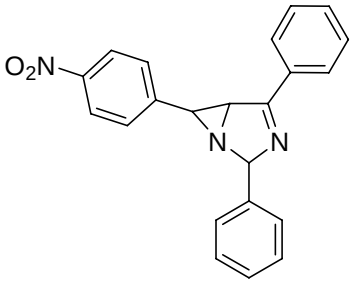
sigma-aldrich.com
Sigma-Aldrich Chemie GmbH · Industriestrasse 25 · Postfach · CH-9471 Buchs / Schweiz
Tel. +41 / 81 755 25 11 · Fax +41 / 81 756 54 49 · Flukatec@sial.com

Tin



Tin ionophore II

(6-(4-Nitrophenyl)-2,4-diphenyl-1,3-diazabicyclo[3.1.0]hex-3-ene)
$C_{22}H_{17}N_3O_2$ M_r 355.39 [13591-58-7]

73443	**Selectophore®, function tested**	50 mg

Sigma-Aldrich Chemie GmbH · Industriestrasse 25 · Postfach · CH-9471 Buchs / Schweiz
Tel. +41 / 81 755 25 11 · Fax +41 / 81 756 54 49 · Flukatec@sial.com

Electrochemical Transduction

Ion-Selective Electrodes

Application 1 and Sensor Type [1]

Assay of Sn^{2+} activity in aqueous solution with solvent polymeric membrane electrode based on Tin ionophore II.

Recommended Membrane Composition

5.5	wt%	Tin ionophore II (73443)
58.0	wt%	Acetophenone (00790)
6.5	wt%	Oleic acid (05508)
30.0	wt%	Poly(vinyl chloride) high molecular weight (81392)

Recommended Cell Assembly

Reference ‖ sample solution ‖ liquid membrane | 0.001 M $SnCl_2$ + 0.001 M HCl | AgCl, Ag

Electrode Characteristics and Function

Selectivity coefficients $\log K^{Pot}_{Sn, M}$ as obtained by the separate solution method (0.1 M solutions of chlorides).

$\log K^{Pot}_{Sn, Ca}$	-1.0	$\log K^{Pot}_{Sn, Zn}$	-1.0
$\log K^{Pot}_{Sn, Mg}$	-1.3	$\log K^{Pot}_{Sn, Ni}$	-3.1
$\log K^{Pot}_{Sn, Co}$	-1.0	$\log K^{Pot}_{Sn, Cu}$	-1.3

Slope of linear regression: 30.1 mV ($4 \cdot 10^{-10}$ to 0.033 mol/L)
Detection limit: $2 \cdot 10^{-10}$ M Zn^{2+}

[1] M. Arvand, A.M. Moghimi, A. Afshari, N. Mahmoodi, Potentiometric membrane sensor based on 6-(4-nitrophenyl)-2,4-diphenyl-3,5-diaza-bicyclo[3.1.0]hex-2-ene for detection of Sn(II) in real samples. **Anal. Chim. Acta *579***, 102 (2006).