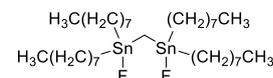# Product Information

02536 Fluoride ionophore I
(Bis[fluoro(di-*n*-dioctyl)stannyl]methane)
Selectophore®, function tested

Electrochemical Transduction
Ion-Selective Electrodes

Application 1 and Sensor Type[1,2]
Assay of F⁻ activity with solvent polymeric electrodes based on Fluoride Ionophore I. The major interfering ions are $H_2PO_4^{2-}$ and SCN⁻.

Recommended Cell Assembly
Reference || sample solution || ion-selective membrane | 0.01 M KF, buffered with 0.001M MES pH 5.5 (69892) | AgCl, Ag

Recommended Membrane Composition

1.5 wt%	Fluoride ionophore I	(02536)
33.2 wt%	Poly(vinyl chloride) high molecular weight	(81392)
65.3 wt%	Bis(2-ethylhexyl) sebacate	(84818)

Electrode Characteristics and Function
Selectivity coefficients $\log K_{F,X}^{Pot}$ as obtained by the separate solution method in (0.01 M solutions of the potassium salts).

$\log K_{F,SCN}^{Pot}$	0.1	$\log K_{F,NO_2}^{Pot}$	-2.0
$\log K_{F,Br}^{Pot}$	-2.5	$\log K_{F,NO_3}^{Pot}$	-3.3
$\log K_{F,Cl}^{Pot}$	-3.0	$\log K_{H_2,PO_4}^{Pot}$	0.9

Slope of linear regression:	57-58 mV/dec
Nernstian electrode response:	$(3 \cdot 10^{-5}$ to 10^{-1} M KF)
Detection limit:	$\log a_{F^-} \sim -4.5$

---

[1] Selective fluoride recognition and potentiometric properties of ion-selective electrodes based on bis(halodiphenylstannyl)-alkanes, K. Perdikaki, I. Tsagkatakis, N. Chaniotakis, R. Altmann, K. Jurkschat, G. Reeske, Anal. Chim. Acta 467, 197 (2002).
[2] Bis[di-*n*-alkyl(fluoro)stannyl]methanes, $(R_2FSn)_2CH_2$ (R = *n*-octyl, *n*-dodecyl): Stable Fluoride-Selective Carriers, N. Chaniotakis, K. Jurkschat, D. Müller, K. Perdikaki, G. Reeske, Eur. J. Inorg. Chem. 11, 2283 (2004).

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