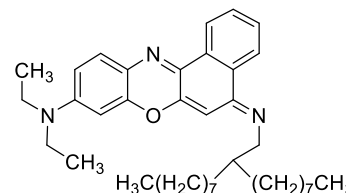


Product Information



27088 Chromoionophore III

(ETH 5350; 9-(Diethylamino)-5-[(2-octyldecyl)imino]benzo[a]phenoxazine)
Selectophore®

Optical Transduction

Application 1 and Sensor Type^{1,2}

Assay of Na⁺ activity in aqueous solutions with solvent polymeric optode membranes based on Chromoionophore III (ETH 5350) and Sodium Ionophore V (ETH 4120).

Recommended Membrane Composition

0.40 wt%	Chromoionophore III (27088)
12.06 wt%	Sodium Ionophore V (71738)
0.72 wt%	Sodium tetrakis[3,5-bis(trifluoromethyl)phenyl]borate (72017)
57.87 wt%	Bis(1-butylpentyl) adipate (02150)
28.94 wt%	Poly(vinyl chloride) high molecular weight (81392)

Recommended pH Buffer

0.1 M Tris(hydroxymethyl)aminomethane adjusted to pH 7.6 with HCl.

Absorbance Maxima of Chromoionophore II in Polymeric Optode Membranes¹

$\lambda_{deprot.}^{max}$: 498 nm $\lambda_{prot.}^{max}$: 645 nm

Optode Characteristics and Function

Selectivity coefficients $\log K_{Na,M}^{Opt}$ as obtained by the fixed interference method (0.01 M solutions of the acetates, buffered to pH 5.5).

$\log K_{Na,K}^{Opt}$	-1.2	$\log K_{Na,Ca}^{Opt}$	-1.4
$\log K_{Na,Li}^{Opt}$	-1.1	$\log K_{Na,Mg}^{Opt}$	-3.0

Detection range: 10^{-7} M to 10^{-4} NaCl (pH 7.6, Tris buffer)

Application 2 and Sensor Type³

Assay of ammonia gas in aqueous solutions with solvent polymeric optode membranes based on Chromoionophore III (ETH 5350) and Ammonium ionophore I.

Recommended Membrane Composition

2.36 wt%	Ammonium ionophore I (09877)
1.54 wt%	Chromoionophore III (27088)
1.54 wt%	Potassium tetrakis(4-chlorophenylphenyl)borate (60591)
63.04 wt%	Bis(2-ethylhexyl)sebacate (84818)
31.52 wt%	Poly(vinyl chloride) high molecular weight (81392)



Optode Characteristics

Selectivity coefficients $\log K_{NH_3,G}^{Opt}$ as obtained by the separate solution method.

$\log K_{NH_3,MeNH_2}^{Opt}$	-2.7	$\log K_{NH_3,Me_2NH}^{Opt}$	-4.0
$\log K_{NH_3,EtNH_2}^{Opt}$	-3.7	$\log K_{NH_3,Me_3N}^{Opt}$	-4.7
$\log K_{NH_3,PrNH_2}^{Opt}$	-3.5		

Reproducibility: 10^{-4} NH₃ ~4.5%; 10^{-3} M NH₃ ~2.6%

Response time: 95% response time ≤1 min (concentration range: ~ 10^{-4} M)

¹ K. Seiler, Ion-selective Optode Membranes, monograph, describing theory, preparation and application of ion- selective optode membranes as well as recent developments in this field. With 237 references. published by Fluka Chemie GmbH, Buchs, Switzerland (1993); Seiler, Ionenselektive Optodenmembranen, dt. Monographie, herausgegeben von Fluka Chemie GmbH, Buchs, Switzerland (1993).

² Characterization of sodium-selective optode membranes based on neutral ionophores and assay of sodium in plasma K. Seiler, K. Wang, E. Bakker, W. E. Morf, B. Rusterholz, U. E. Spichiger, W. Simon, Clin. Chem. 37, 1350 (1991).

³ Ammonia-gas-selective optical sensors based on neutral ionophores. S. Ozawa, P. C. Hauser, S. S. S. Tan, W. E. Morf, W. Simon, Anal. Chem. 63, 640 (1991).

