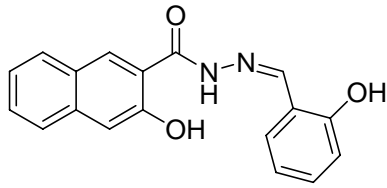


## Ytterbium



**Ytterbium(III) ionophore II**  
(3-Hydroxy-2-naphthoic(2-hydroxybenzylidene)hydrazide)  
C<sub>18</sub>H<sub>14</sub>N<sub>2</sub>O<sub>3</sub>    M<sub>r</sub> 306.32    [80648-84-6]

[08776](#)    **Selectophore<sup>®</sup>, function tested**

50 mg

## Electrochemical Transduction

- Ion-Selective Electrodes

## Electrochemical Transduction

### Ion-Selective Electrodes

#### Application and Sensor Type <sup>1</sup>

Determination of Yb<sup>3+</sup> activity with solvent polymeric membrane electrodes based on Ytterbium(III) ionophore II.

#### Recommended Membrane Composition

6.0	wt%	Ytterbium(III) ionophore II ( <a href="#">18588</a> )
57.0	wt%	Dibutyl phthalate ( <a href="#">80100</a> )
4.0	wt%	Sodium tetraphenylborate ( <a href="#">72018</a> )
33.0	wt%	Poly(vinyl chloride) high molecular weight ( <a href="#">81392</a> )

#### Recommended Cell Assembly

Reference || sample solution || ion-selective membrane | 0.001 M Yb(NO<sub>3</sub>)<sub>3</sub> | AgCl, Ag

#### Electrode Characteristics and Function

Selectivity coefficients  $\log K_{Yb, M}^{Pot}$  as obtained by the single solution method (0.01 M solution of the nitrate salts).

$\log K_{Yb, Ce}^{Pot}$	-3.6	$\log K_{Yb, Ca}^{Pot}$	-2.5
$\log K_{Yb, La}^{Pot}$	-3.8	$\log K_{Yb, Cd}^{Pot}$	-2.6
$\log K_{Yb, Mg}^{Pot}$	-2.4		

Slope: 21.4 mV/dec (5•10<sup>-5</sup> to 1•10<sup>-2</sup> M Ce(NO<sub>3</sub>)<sub>3</sub>)

Detection level: 1 • 10<sup>-5</sup> mol/L

Practical pH measuring range: 3.0-8.5

<sup>1</sup> M.R. Ganjali, P. Norouzi, A. Tamaddonb, M. Adib, Nano-level monitoring of ytterbium(III) by a novel ytterbium(III) membrane sensor based on 3-hydroxy-*N*-[(2-hydroxyphenyl)methylene]-2-naphthohydrazide. **Sensors and Actuators B** 114, 855 (2006).