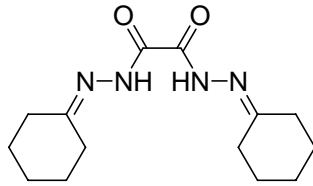


## Chromium



**Chromium(III) ionophore III**  
(Bis(cyclohexanone)oxaldihydrazone)  
 $C_{14}H_{22}N_4O_2$   $M_r = 278.35$  [370-81-0]

[41433](#) **Selectophore<sup>®</sup>, function tested** 50 mg

### Electrochemical Transduction

- Ion-Selective Electrodes

# Electrochemical Transduction

## Ion-Selective Electrodes

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

Assay of Cr(III) activity in aqueous solutions with solvent polymeric membrane electrodes based on Chromium(III) ionophore III.

### Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.001 M CrCl<sub>3</sub> | AgCl,Ag

### Recommended Membrane Composition

1.0	wt%	Chromium(III) ionophore I ( <a href="#">41433</a> )
7.0	wt%	Oleic acid ( <a href="#">05508</a> )
59.0	wt%	Dibutyl phthalate ( <a href="#">80100</a> )
33.0	wt%	Poly(vinyl chloride) high molecular weight ( <a href="#">81392</a> )

### Electrode Characteristics and Function

Selectivity Coefficients  $\log K_{Cr(III), M}^{Pot}$  as obtained by the separate solution method (0.1 M solutions of the chlorides)

$\log K_{Cr(III), Fe(II)}^{Pot}$	3.7	$\log K_{Cr(III), Cu(II)}^{Pot}$	-0.1
$\log K_{Cr(III), Pb(II)}^{Pot}$	-3.2	$\log K_{Cr(III), Co(II)}^{Pot}$	-3.0
$\log K_{Cr(III), Ni(II)}^{Pot}$	-2.6	$\log K_{Cr(III), Zn(II)}^{Pot}$	-3.2

Slope of linear regression: 20..4 mV/dec

Detection limit:  $5 \cdot 10^{-5}$  M Cr(III)

pH range: 1.7-6.5

<sup>1</sup> M.B. Gholivand, F. Raheedayat, Chromium(III) Ion Selective Electrode Based on Oxalic Acid Bis(Cyclohexylidene Hydrazide). **Electroanalysis** **16**, 1330 (2004)