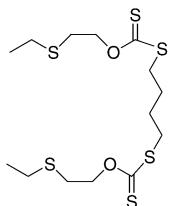


Table 20: Sm³⁺-Selective Electrodes

ionophore	membrane composition	$\lg K_{\text{Sm}^{3+}, \text{B}^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/decade)	linear range (M)	remarks	ref.
Sm³⁺-1	Sm³⁺-1 ($w = 10.2\%$), KTPCIPB ($x_1 = 6\%$), oNPOE ($w = 60.4\%$), PVC ($w = 28.7\%$)	Na ⁺ , -3.2; K ⁺ , -2.8; NH ₄ ⁺ , -2.9; Mg ²⁺ , -2.6; Ca ²⁺ , -1.8; Ni ²⁺ , -2.6; Cu ²⁺ , +1.2; Zn ²⁺ , -2.7; Pb ²⁺ , -0.8; Al ³⁺ , -2.8; Cr ³⁺ , -2.5; Fe ³⁺ , +0.1; La ³⁺ , -2.3; Ce ³⁺ , -1.6; Pr ³⁺ , -1.5; Nd ³⁺ , -1.8; Gd ³⁺ , -1.2	MPM	10 ⁻⁵	–	20.0	1 × 10 ⁻⁷ –5 × 10 ⁻³	coated carbon elec.;; 25 ± 2 °C; 4.5 < pH < 6.7; $t_{\text{resp}} = 5.0$ s; $\tau = 14$ d	[1,2]
	Sm³⁺-1 ($w = 10.2\%$), KTPCIPB ($x_1 = 6\%$), FNDPE ($w = 60.4\%$), PVC ($w = 28.7\%$)	Na ⁺ , -3.3; K ⁺ , -2.9; NH ₄ ⁺ , -2.9; Mg ²⁺ , -2.3; Ca ²⁺ , -2.7; Ni ²⁺ , -2.2; Cu ²⁺ , +1.2; Zn ²⁺ , -2.3; Pb ²⁺ , -0.8; Al ³⁺ , -2.9; Cr ³⁺ , -3.1; Fe ³⁺ , +0.3; La ³⁺ , -2.05; Ce ³⁺ , -1.3; Pr ³⁺ , -1.0; Nd ³⁺ , -1.5; Gd ³⁺ , -1.4	MPM	10 ⁻⁵	–	20.0	1 × 10 ⁻⁷ –5 × 10 ⁻³	coated carbon [2] elec.;; 25 ± 2 °C; 4.5 < pH < 6.7; $t_{\text{resp}} = 5.0$ s; $\tau = 14$ d	[2]

- (1) T. Ogata, D. A. Chowdhury, S. Kamata, Y. Usui, K. Ohashi, *Chem. Lett.*, 1041-1042 (1995).
 (2) D.A. Chowdhury, T. Ogata, S. Kamata, K. Ohashi, *Anal. Chem.*, **68**, 366-377 (1996).

**Sm³⁺-1** ($M_r = 418.71$)