

Table 17: Tl⁺-Selective Electrodes

ionophore	membrane composition	$\lg K_{\text{Tl}^+,\text{B}^n+}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/decade)	linear range (M)	remarks	ref.
Tl⁺-1	Tl⁺-1 (<i>w</i> = 2.8 %), NaTFPB (<i>x</i> _i = 16 %), oNPOE (<i>w</i> = 69.0%), PVC (<i>w</i> = 27.6 %)	Na ⁺ , -4.0; K ⁺ , -0.5; Rb ⁺ , -0.95; Cs ⁺ , -1.95; NH ₄ ⁺ , -2.05; Mg ²⁺ , -5.3; Ca ²⁺ , -5.0; Sr ²⁺ , -5.2; Ba ²⁺ , -4.6; Pb ²⁺ , -4.7; Cd ²⁺ , -5.4; Ag ⁺ , -3.2; As ³⁺ , -4.0	MSM	-	-	-	-	r.o.o.g.	[1]
Tl⁺-2	Tl⁺-2 (<i>w</i> = 2.8 %), NaTFPB (<i>x</i> _i = 8 %), oNPOE (<i>w</i> = 69.0%), PVC (<i>w</i> = 27.6 %)	Li ⁺ , -4.6; Na ⁺ , -2.0; K ⁺ , -0.15; Rb ⁺ , -0.4; Cs ⁺ , -0.45; NH ₄ ⁺ , -1.9; H ⁺ , -3.5; Mg ²⁺ , -4.4; Ca ²⁺ , -4.5; Sr ²⁺ , -4.1; Ba ²⁺ , -3.4; Co ²⁺ , -4.3; Ni ²⁺ , -4.4; Cu ²⁺ , -4.15; Zn ²⁺ , -4.7; Cd ²⁺ , -4.15; Hg ²⁺ , -3.4; Cr ³⁺ , -4.23; Fe ³⁺ , -3.7; Ag ⁺ , -1.2	MSM	-	-	59	3.2×10^{-5} – 1.0×10^{-2}	3 < pH < 11; $\tau > 30$ d; <i>t</i> _{resp} < 10 s; r.o.o.g.	[1]
Tl⁺-3	Tl⁺-3 (<i>w</i> = 2.8 %), NaTFPB (<i>x</i> _i = 8 %), oNPOE (<i>w</i> = 69.0%), PVC (<i>w</i> = 27.6 %)	Li ⁺ , -3.3; Na ⁺ , -2.5; K ⁺ , -1.26; Rb ⁺ , -1.1; Cs ⁺ , -1.35; NH ₄ ⁺ , -2.1; H ⁺ , -3.8; Mg ²⁺ , -4.8; Ca ²⁺ , -4.7; Sr ²⁺ , -4.3; Ba ²⁺ , -3.7; Co ²⁺ , -4.5; Ni ²⁺ , -4.3; Cu ²⁺ , -4.2; Zn ²⁺ , -4.9; Cd ²⁺ , -4.4; Hg ²⁺ , -4.1; Cr ³⁺ , -4.7; Fe ³⁺ , -4.6; Ag ⁺ , -1.4	MSM	-	-	59	3.2×10^{-5} – 1.0×10^{-2}	3 < pH < 11; $\tau > 30$ d; <i>t</i> _{resp} < 10 s; r.o.o.g.	[1]
Tl⁺-4	Tl⁺-4 (<i>w</i> = 2.8 %), NaTFPB (<i>x</i> _i = 9 %), oNPOE (<i>w</i> = 69.0%), PVC (<i>w</i> = 27.6 %)	Li ⁺ , -4.6; Na ⁺ , -3.0; K ⁺ , -1.73; Rb ⁺ , -1.6; Cs ⁺ , -1.5; NH ₄ ⁺ , -2.2; H ⁺ , -3.9; Mg ²⁺ , -5.1; Ca ²⁺ , -5.0; Sr ²⁺ , -4.5; Ba ²⁺ , -4.0; Co ²⁺ , -4.8; Ni ²⁺ , -4.5; Cu ²⁺ , -4.9; Zn ²⁺ , -5.0; Cd ²⁺ , -4.8; Hg ²⁺ , -3.5; Cr ³⁺ , -4.9; Fe ³⁺ , -3.9; Ag ⁺ , -1.4	MSM	-	-	59	3.2×10^{-5} – 1.0×10^{-2}	3 < pH < 11; $\tau > 30$ d; <i>t</i> _{resp} < 10 s; r.o.o.g.	[1]

Table 17: Tl⁺-Selective Electrodes (*Continued*)

ionophore	membrane composition	$\lg K_{\text{Tl}^+, \text{B}^{n+}}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/decade)	linear range (M)	remarks	ref.
Tl⁺-5	Tl⁺-5 , DOP, PVC (weight ratio not given)	Na ⁺ , -2.3; Mg ²⁺ , -3.4; Ca ²⁺ , -2.9; Co ²⁺ , -3.2; Ni ²⁺ , -3.9; Cu ²⁺ , -2.8; Zn ²⁺ , -3.6; Fe ³⁺ , -2.9	FIM	–	–	–	–	pH = 5.0; r.o.o.g.	[2]
	Tl⁺-5 (<i>w</i> = 5.1 %), DOP (<i>w</i> = 61.5 %), PVC (<i>w</i> = 30.8 %), KTpCIPB (<i>x</i> ₁ = 28 %)	Mg ²⁺ , -3.4; Ca ²⁺ , -3.3; Co ²⁺ , -3.1; Ni ²⁺ , -3.6; Cu ²⁺ , -3.3; Zn ²⁺ , -3.8; Fe ³⁺ , -3.2	MSM	–	–	55	10 ⁻⁵ –10 ⁻¹	r.o.o.g.	[2]
	Tl⁺-5 (<i>w</i> = 5.1 %), DOS (<i>w</i> = 61.5 %), PVC (<i>w</i> = 30.8 %), KTpCIPB (<i>x</i> ₁ = 28 %)	Mg ²⁺ , -3.2; Ca ²⁺ , -3.1; Co ²⁺ , -3.5; Zn ²⁺ , -3.3	FIM	–	–	–	–	r.o.o.g.	[2]
	Tl⁺-5 (<i>w</i> = 3.0 %), DOP (<i>w</i> = 51 %), PVC (<i>w</i> = 46 %)	Co ²⁺ , -2.0; Ni ²⁺ , -1.6; Cu ²⁺ , -0.8; Fe ²⁺ , -1.3	FIM	–	–	46	10 ⁻⁵ –10 ⁻¹	CWE; r.o.o.g.	[2]

- (1) Y. Yamashoji, M. Tanaka, S. Nagamune, M. Ouchi, T. Hakushi, T. Shono, *Anal. Sci.*, **7**, 485–486 (1991).
 (2) Y. Masuda, K. Yakabe, Y. Shibutani, T. Shono, *Anal. Sci.*, **10**, 491–495 (1994).

