

**Table 15:** Cd<sup>2+</sup>-Selective Electrodes

ionophore	membrane composition	$\lg K_{\text{Cd}^{2+}, \text{Bn}^+}$	method	primary ion conc. (M)	interfering ion conc. (M)	slope (mV/decade)	linear range (M)	remarks	ref.
<b>Cd<sup>2+</sup>-1</b>	<b>Cd<sup>2+</sup>-1</b> ( <i>w</i> = 5 %), NaTPB ( <i>x<sub>i</sub></i> = 63 %), DOP ( <i>w</i> = 45 %), PVC ( <i>w</i> = 47.5 %)	Co <sup>2+</sup> , -0.97; Ni <sup>2+</sup> , -2.40; Cu <sup>2+</sup> , +5.77; Zn <sup>2+</sup> , +0.85	SSM	0.1	0.1	30	10 <sup>-5.4</sup> -10 <sup>-3</sup>	CWE; <i>c<sub>dl</sub></i> = 10 <sup>-6</sup> M	[1]
<b>Cd<sup>2+</sup>-2</b>	<b>Cd<sup>2+</sup>-2</b> ( <i>w</i> = 2.1 %), KTPCIPB ( <i>x<sub>i</sub></i> = 63 %), DOP, PVC (weight ratio not given)	K <sup>+</sup> , interferes; Ca <sup>2+</sup> , -3.2; Cu <sup>2+</sup> , -0.6; Pb <sup>2+</sup> , interferes	FIM	-	0.1 0.01	30	-	ISFET	[2]
<b>Cd<sup>2+</sup>-3</b>	<b>Cd<sup>2+</sup>-3</b> ( <i>w</i> = 2.3 %), KTPCIPB ( <i>x<sub>i</sub></i> = 63 %), DOP, PVC (weight ratio not given)	K <sup>+</sup> , interferes; Ca <sup>2+</sup> , -2.3; Cu <sup>2+</sup> , Pb <sup>2+</sup> , interfere	FIM	-	0.1 0.01	30	-		[2]
<b>Cd<sup>2+</sup>-4</b>	<b>Cd<sup>2+</sup>-4</b> ( <i>w</i> = 2.8 %), KTPCIPB ( <i>x<sub>i</sub></i> = 63 %), DOP, PVC (weight ratio not given)	K <sup>+</sup> , -2.5; Ca <sup>2+</sup> , -3.9; Cu <sup>2+</sup> , Pb <sup>2+</sup> , interfere	FIM	-	0.1 0.01	30	-		[2]
		<b>Cd<sup>2+</sup>-4</b> ( <i>w</i> = 3 %), KTPCIPB ( <i>x<sub>i</sub></i> = 63 %), DOP, PVC (weight ratio not given)	K <sup>+</sup> , -2.6; Ca <sup>2+</sup> , -3.8; Cu <sup>2+</sup> , Pb <sup>2+</sup> , interfere	FIM	-	0.1 0.01	29	-	
<b>Cd<sup>2+</sup>-5</b>	<b>Cd<sup>2+</sup>-5</b> ( <i>w</i> = 2.1 %), KTPCIPB ( <i>x<sub>i</sub></i> = 63 %), DOP, PVC (weight ratio not given)	K <sup>+</sup> , interferes; Ca <sup>2+</sup> , -3.2; Cu <sup>2+</sup> , Pb <sup>2+</sup> , interfere	FIM	-	0.1 0.01	30	-		[2]
<b>Cd<sup>2+</sup>-6</b>	<b>Cd<sup>2+</sup>-6</b> ( <i>w</i> = 5 %), BEHS ( <i>w</i> = 62 %), PVC-PVA-PVAc ( <i>w</i> = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K <sup>+</sup> , -3.11; Al <sup>3+</sup> , -3.68; Hg <sup>2+</sup> , +3.03; Fe <sup>2+</sup> , -2.83; Cu <sup>2+</sup> , +1.24; Pb <sup>2+</sup> , -0.11;	FIM	-	0.1 0.01 0.001 5 x 10 <sup>-5</sup>	31.9	10 <sup>-6</sup> -8.4 x 10 <sup>-3</sup>	25 °C; ionic strength of 10 <sup>-3</sup> M NaClO <sub>4</sub> ; <i>τ</i> = 210 d; <i>t<sub>resp</sub></i> = 20 s	[3]
		<b>Cd<sup>2+</sup>-6</b> ( <i>w</i> = 5 %), BEHS ( <i>w</i> = 62 %), PVC-PVA-PVAc ( <i>w</i> = 33 %) PVA, poly(vinyl alcohol); PVAc, poly(vinyl acetate)	K <sup>+</sup> , -5.04; Al <sup>3+</sup> , -4.19; Fe <sup>2+</sup> , -2.36; Cu <sup>2+</sup> , +1.60; Pb <sup>2+</sup> , +0.45; Hg <sup>2+</sup> , +3.47	FIM	-	1.0 0.02 0.01 0.001 10 <sup>-4</sup> 0.1	31.9	10 <sup>-6</sup> -8.4 x 10 <sup>-3</sup>	25 °C; ionic strength of 10 <sup>-3</sup> M NaClO <sub>4</sub> ; <i>τ</i> = 70 d; <i>t<sub>resp</sub></i> = 20 s; coated carbon elec.
<b>Cd<sup>2+</sup>-7</b>	<b>Cd<sup>2+</sup>-7</b> ( <i>w</i> = 7 %), DBP ( <i>w</i> = 13 %), PVC ( <i>w</i> = 80 %)	Li <sup>+</sup> , -1.10; Na <sup>+</sup> , -0.9; K <sup>+</sup> , -1.05; Rb <sup>+</sup> , -1.05; NH <sub>4</sub> <sup>+</sup> , -1.10; Mg <sup>2+</sup> , -0.75; Ca <sup>2+</sup> , -0.65; Cr <sup>3+</sup> , -0.63; Fe <sup>3+</sup> , -0.70; Co <sup>2+</sup> , -0.95; Cu <sup>2+</sup> , -0.75; Pb <sup>2+</sup> , -0.75; Hg <sup>2+</sup> , -1.00; Zn <sup>2+</sup> , -1.00	FIM	-	1.0 x 10 <sup>-2</sup>	20.0	5.00 x 10 <sup>-3</sup> -1.00 x 10 <sup>-1</sup>	25 ± 1 °C; 3.8 < pH < 7.0; <i>c<sub>dl</sub></i> = 3.16 x 10 <sup>-5</sup> M; <i>τ</i> = 60 d; <i>t<sub>resp</sub></i> < 30 s	[4]

**Table 15:** Cd<sup>2+</sup>-Selective Electrodes (Continued)

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- (3) A. Borraccino, L. Campanella, M.P. Sammartino, M. Tomassetti, M. Battilotti, *Sens. Actuators*, **B7**, 535–539 (1992).
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