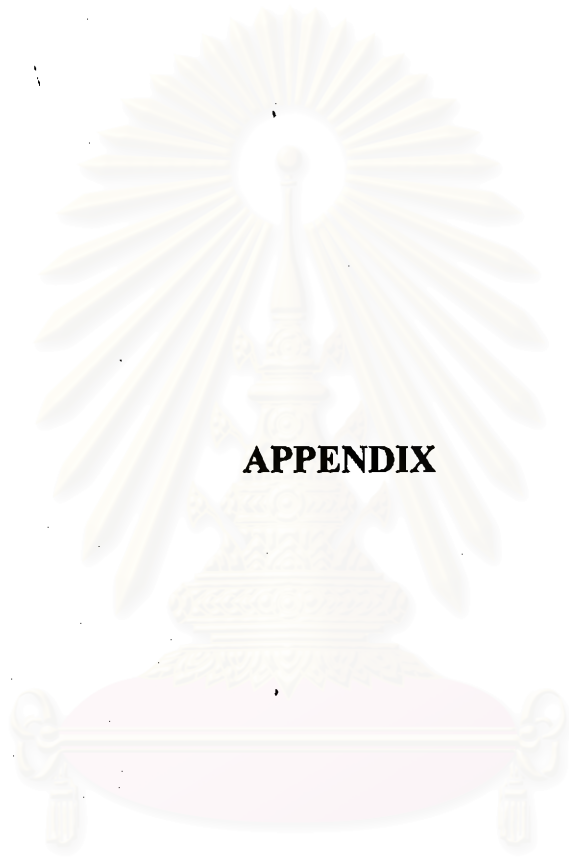


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APPENDIX

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APPENDIX

Critical stability constants of some α -dioximes and triethanolamine(37)

1 Dimethylglyoxime (Butane-2,3-dione dioxime) $C_4H_8O_2N_2$, HL

Metal Ion	Equilibrium	Log K 25°,0.1	Log K 20°,1.0	Log K 25°,0
H ⁺	L/H ₁ L.H	11.9	-	12.0
	HL/H.L	10.45±0.03		10.66±0.0
Ni ²⁺	ML ₂ /M.L ²	17.24	-	17.84
	ML ₂ /ML ₂ (s)	-6.03		-6.00
Cu ²⁺	ML ₂ /M.L	19.24	-	-
	ML ₂ /MOHL ₂ .H	10.60		
Pd ²⁺	ML ₂ /M.L ²	34.1	34.3	-
	MOHL ₂ /ML ₂ .OH	5.50	5.6	

r 25-40°, 0

2 Diphenylglyoxime (1,2 Diphenyletane-1,2-dione dioxime, benzildioxime), HL

Metal Ion	Equilibrium	Log K 25°,0.1	Log K 20°,1.0
H ⁺	L/H ₁ L.H	11.2	11.8
	HL/H.L	10.30±0.3	10.15
	HL/HL(s)	-4.8	
Ni ²⁺	ML ₂ /M.L ²	26.2	-
Pd ²⁺	ML ₂ /M.L ²	-	34.6
	MOHL ₂ /ML ₂ .OH		4.9

3 1,2-Di(2-furanyl)ethane-1,2-dione dioxime (Furildioxime), HL

Metal Ion	Equilibrium	Log K 25°,0.1	Log K 20°,1.0
H ⁺	L/H ₁ L.H	11.1	11.4
	HL/H.L	9.73	9.72
Ni ²⁺	ML/M.L	8.2	-
	ML ₂ /M.L ²	14.90	-
Pd ²⁺	ML ₂ /M.L ²	-	43.7
	MOHL ₂ /ML ₂ .OH	-	3.4

4 Cyclohexane-1,2-dione dioxime (nioxime), HL

Metal Ion	Equilibrium	Log K 25°,0.1	Log K 20°,1.0	Log K 25°,0
H ⁺	L/H ₁ L.H	12.1	-	12.5
	HL/H.L	10.57±0.02	-	10.7
Ni ²⁺	ML/M.L	10.8	-	-
	ML ₂ /M.L ²	21.5	-	-
	ML ₂ /ML ₂ (s)	-	-6.48	-
Fe ³⁺	ML/M.L	-	11.07 ^b	-
	ML ₂ /M.L ²	-	21.74 ^b	-
	ML ₃ /ML ³	-	31.99 ^b	-
Pd ²⁺	MOHL ₂ /ML ₂ .OH	-	3.9	-

b 25°, 0.5 ; r 25-40°,0

5 Triethanolamine

Metal Ion	Equilibrium	Log K 25°,0.1	Log K 25°,0.5	Log K 25°,0
H ⁺	HL/H.L	7.8	7.9 7.99 ^a	7.762 8.35 ^b
Ni ²⁺	ML/M.L ML ₂ /M.L ²	-	2.27 3.09	2.92 ^c 4.74 ^c
Cd ²⁺	ML/M.L ML ₂ /M.L ² ML ₃ /ML ³	2.7 4.6 5.21	-	-
Hg ²⁺	ML/M.L ML ₂ /M.L ²	-	6.9 13.08	-
Co ²⁺	ML/M.L	-	1.73	-
Cu ²⁺	ML/M.L ML ₂ /M.L ²	3.9 6.0	4.23	-
Ag ⁺	ML/M.L ML ₂ /M.L ²	-	2.3 3.64	4.23 ^e

a 25°,1.0 ; b 25°, 3.0 ; c 20°, 1.0 ; d 25°, 0.5 ; e 20°, 0

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