Supplementary Material (ESI) for New Journal of Chemistry

Electron-reservoir complexes and other redox-robust reagents: functions and applications.

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SUPPLEMENTARY INFORMATION

Table 3: Formal Potentials (V) of the Main Reductants

Reductant	Solvent	E^o vs. $FeCp^*_2$	E^o vs. SCE	E^o vs. NHE	E^o vs. $FeCp_2$
$[C_{10}H_8]^{\bullet-}$	THF	-2.66	-2.76	-2.52	-3.10
-	DMF	-2.56	-2.68	-2.44	-3.05
Na	THF,DME	-2.60	-2.72	-2.58	-3.04
Li(Hg)	H_2O	-2.13	-2.16	-1.92	-2.60
[anthracene]$^{\bullet-}$	THF	-2.08*	-1.98		
$FeCp^*(C_6Me_6)$	CH_2Cl_2	-1.75*	-1.85	-1.61	-2.30
-	DMF	-1.75*	-1.76	-1.62	-2.24
[perylene]$^{\bullet-}$	THF	-1.75*			
[benzophenone]$^{\bullet-}$	THF	-1.75	-1.86	-1.62	-2.30
-	MeCN	1.68*	-1.69	-1.45	-2.17
$FeCp(C_6Me_6)$	DMF	-1.54	-1.55	-1.31	-2.02
-	THF	-1.53*			
-	DMSO	-1.52*	-1.56	-1.32	-1.99
C_{60}^{3-}	MeCN+PhMe	-1.41*	-1.36	1.12	-1.87
$CoCp^*_2$	DMF	-1.39*	-1.40	-1.16	-1.87
$FeCp(C_6H_6)$	THF	-1.34*			
C_{60}^{2-}	MeCN/PhMe	-0.915*	-0.91	-0.67	-1.37
$CoCp_2$	DME	-0.74*	-0.86	-0.62	-1.33
C_{60}^{-}	MeCN/PhMe	-0.515*	-0.51	-0.27	-0.98
$FeCp^*_2$	DMF	0	-0.012	+0.23	-0.49
-	CH_2Cl_2	0	-0.105	+0.13	-0.55
hydrazine	DMSO	+0.06	-0.03	+0.21	-0.41

Table 4: Formal Potentials (V) of the Main Oxidants

Oxidant	Solvent	$E^{o'}$ vs. $FeCp^*_2$	E^o vs. SCE	E^o vs. NHE	E^o vs. $FeCp_2$
$[N(C_6H_2Br_3\text{-}2,4,6)_3]^+$	MeCN	1.87	1.74	1.98	1.36
$[N(C_6H_3Br_2\text{-}2,4)_3]^+$	MeCN	1.65	1.52	1.76	1.14
$[NO]^+$	CH_2Cl_2	1.55	1.44	1.68	1.00
$[RuL_3]_{3+}$, L=bpy or phen	MeCN	1.40*	1.25	1.49	0.87
[thianthrene]$\bullet^+$	MeCN	1.32*	1.24	1.48	0.86
$[N(C_6H_4Br\text{-}4)_3]\bullet^+$	MeCN	1.21*	1.05	1.29	0.70
$[Fe(bipy)_3]^{3+}$	MeCN	1.17	1.04	1.28	0.66
Ag^+	CH_2Cl_2	1.16	1.05	1.29	0.65
$FeCp(\eta^5\text{-}C_5H_4COMe)^+$	MeCN	0.75*	0.71	0.95	0.27
Cl_2	MeCN	0.69	0.56	0.80	0.18
DDQ	MeCN	0.635*	0.51	0.75	0.13
Br_2	MeCN	0.58	0.45	0.69	0.07
$FeCp_2$	MeCN	0.51*	0.38	0.62	0.
-	CH_2Cl_2	0.55*	0.42	0.66	0.
$[N_2C_6H_4F\text{-}4]+$	MeCN	0.44	0.31	0.55	-0.07
$Fe[C_5(CH_2Ph)_5]_2$	CH_2Cl_2	0.49*	0.50	0.74	-0.06
-	THF,MeCN	0.41*			
-	DMF	0.34*	0.215	0.455	-0.14
I_2	MeCN	0.37	0.24	0.48	-0.14
TCNE	MeCN	0.345*	0.11	0.35	-0.27
TCNQ	MeCN	0.32*	0.08	0.32	-0.30
$FeCp^*_2$	MeCN	0	-0.13	0.11	-0.51

-	CH_2Cl_2	0	-0.105	0.13	-0.55

Caption to Table 3 and 4: Direct measurements *vs.* [$FeCp^*_2$] are noted by * . The mono, di- and trianion of C_{60} are accessible by reduction of C_{60} using [$FeCp(C_6Me_6)$].[25] The other values *vs.* [$FeCp_2$*] are: $C_{60}^{3-/4-}$: -1.895*, $C_{60}^{4-/5-}$: -2.39 V and $C_{60}^{5-/6-}$: -2.39 V. The two later values are deduced from the values *vs.* [$FeCp_2$] reported in ref. 25. Other standard redox potentials *E°'*(V) of oxidants and reductants versus various references extracted from ref. 21 and corrected from the [$FeCp_2$] to the [$FeCp^*_2$] reference using the ΛE^o values of Table 2.