

Contents

Magnetic properties of free radicals

Subvolume e: Radicals centered on heteroatoms with $Z > 7$ and selected anion radicals · I

General introduction

H. FISCHER, Physikalisch-Chemisches Institut der Universität Zürich, Switzerland

A	Definition and substances	1
B	Magnetic properties	1
C	Arrangements of the tables	3
D	Monographs	3

7 Oxy- and peroxy-alkyl radicals

J.A. HOWARD, National Research Council of Canada, Division of Chemistry, Ottawa, Canada

7.1	Alkoxylys	5
7.2	Alkylperoxylys	11
7.3	Other peroxylys	16
7.4	References for 7	34

8 Aroxyl radicals

D. KLOTZ, G. DEUSCHLE, H.B. STEGMANN, Institut für Organische Chemie der Universität Tübingen, FRG

8.0	Introduction	35
	8.0.1 General remarks	35
	8.0.2 Arrangements of the tables	35
8.1	Carbocycles	36
	8.1.1 Monocyclic compounds	36
	8.1.1.1 Phenoxylys	36
	8.1.1.1.1 Phenoxyyl	36
	8.1.1.1.2 Monosubstituted phenoxylys	36
	8.1.1.1.3 Disubstituted phenoxylys	46
	8.1.1.1.4 Trisubstituted phenoxylys	55
	8.1.1.1.4.1 2,3,4-trisubstituted phenoxylys	55
	8.1.1.1.4.2 2,3,5-trisubstituted phenoxylys	55
	8.1.1.1.4.3 2,3,6-trisubstituted phenoxylys	60
	8.1.1.1.4.4 2,4,5-trisubstituted phenoxylys	69
	8.1.1.1.4.5 2,4,6-trisubstituted phenoxylys	75
	8.1.1.1.4.5.1 C-Galvinoxyls	156
	8.1.1.1.4.5.2 N-Galvinoxyls	181
	8.1.1.1.4.6 3,4,5-trisubstituted phenoxylys	181
	8.1.1.1.5 Tetrasubstituted phenoxylys	182
	8.1.1.1.6 Pentasubstituted phenoxylys	187
8.1.2	Condensed two-ring systems	194

8.1.2.1	α -Naphthoxyls	194
	8.1.2.1.1 Un- and monosubstituted α -naphthoxyls	194
	8.1.2.1.2 Di- and higher substituted α -naphthoxyls	196
8.1.2.2	β -Naphthoxyls and related compounds	199
8.1.3	Anthroxyls	200
8.1.4	Phenanthroxyls	209
8.1.5	Acenaphthenes	210
8.2	Heterocycles	211
8.2.1	<i>N</i> -Heterocycles	211
	8.2.1.1 Monocyclic systems	211
	8.2.1.2 Bicyclic systems	212
8.2.2	<i>O</i> -Heterocycles	216
	8.2.2.1 Chromanoxyls	216
	8.2.2.2 Related radicals	226
	8.2.2.3 Condensed dioxol systems	228
8.2.3	<i>N/O</i> -Heterocycles	230
8.2.4	<i>S</i> -Heterocycles	231
8.3	Cations	234
8.4	References for 8.1., 8.2 and 8.3	249

9 Phosphorus-centered organic radicals and related radical ions

P. TORDO, Structure et Réactivité des Espèces Paramagnétiques, Université de Provence, Marseille, France

9.0	Introduction	254
9.1	Phosphinyl radicals of type X_2P^\cdot	255
9.2	Phosphonyl radicals of type $X_2P^\cdot=O$	262
9.3	Phosphoranyl radicals of type X_4P^\cdot including phosphate anions and related species	267
9.4	Cation and anion radicals	307
9.5	Bibliography	313
	9.5.1 Review articles	313
	9.5.2 References for 9.1...9.4	313

10 Sulfur-, selenium- and tellurium-centered organic radicals

H.B. STEGMANN, Institut für Organische Chemie der Universität Tübingen, FRG

10.0	Introduction	315
	10.0.1 General remarks	315
	10.0.2 Arrangements of the tables	315
10.1	Neutral radicals	316
	10.1.1 Thiyl radicals of type RS^\cdot , $R-\dot{S}R_2$	316
	10.1.2 Sulfinyl radicals of type $R-\dot{S}=O$, $R-\dot{S}=NR$	328
	10.1.3 Sulfonyl radicals of type $R-\overset{O}{\underset{O}{\parallel}}{\dot{S}}$	333
	10.1.4 Sulfuranyl radicals	344
	10.1.4.1 Sulfuranyl radicals of type $R-S-\dot{S}-R_2$	344
	10.1.4.2 Sulfuranyl radicals of type $X-\dot{S}-R_2$, $X_2-\dot{S}-R$, $\dot{S}X_3$, and $\dot{S}X_4$	349
	10.1.5 Disulfide radicals of type $R-S-\dot{S}$	357
10.2	Cation radicals	361

10.2.1	Cation radicals of type $R-\overset{\oplus}{S}\cdot-R$	361
10.2.2	Cation radicals of type $R-\overset{\oplus}{S}\cdot-S-R$	365
10.2.3	Cation radicals of type $\begin{array}{c} R \\ \diagdown \\ S^{\oplus} \\ \diagup \\ R \end{array} \begin{array}{c} R \\ \diagup \\ S \\ \diagdown \\ R \end{array}$	374
10.2.4	Cation radicals of type $R_2\overset{\oplus}{S}O$	384
10.3	Anion radicals of type $R-S-\overset{\ominus}{S}\cdot-R$, $R-N-\overset{\ominus}{S}\cdot-N-R$	385
10.4	References for 10	389
	General symbols and abbreviations	391

