10.1071/CH03318_AC
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Accessory Publication: *Aust. J. Chem.*, 2004, **57**(6), 605–608.

# IR, $^{1}$H and $^{13}$C NMR Data of the Dithioacetals and Oxathioacetals included in Table 1

**Entry 1:** $\nu_{max}$ (neat)/cm$^{-1}$ 1586, 1448, 1260, 1093. $\delta_H$ ($CDCl_3$) 3.21-3.31 (m, 2H), 3.35-3.48 (m, 2H), 5.59 (s, 1H), 7.19-7.30 (m, 3H), 7.48-7.55 (m, 2H). $\delta_C$ ($CDCl_3$) 40.7 (2C), 56.7, 127.7 (2C), 128.7, 128.9 (2C), 140.8.
**Entry 2:** $\nu_{max}$ (KBr)/cm$^{-1}$ 1583, 1448, 1273, 1174, 908. $\delta_H$ ($CDCl_3$) 1.89–2.18 (m, 2H), 2.85-2.92 (m, 2H), 3.00–3.09 (m, 2H), 5.17 (s, 1H), 7.27-7.40 (m, 3H), 7.47–7.49 (m, 2H). $\delta_C$ ($CDCl_3$) 25.5, 32.5 (2C), 51.9, 128.2 (2C), 128.8, 129.1 (2C), 139.5.
**Entry 3:** $\nu_{max}$ (KBr)/cm$^{-1}$ 1720, 1402, 1271, 1010. $\delta_H$ ($CDCl_3$) 1.90–2.11 (m, 2H), 3.29–3.41 (m, 4H), 5.50 (s, 1H), 7.27 (d, *J* 6.1, 2H), 7.45 (d, *J* 6.1, 2H). $\delta_C$ ($CDCl_3$) 28.1, 39.1 (2C), 54.8, 129.0 (2C), 129.2, 129.7 (2C), 139.4.
**Entry 4:** $\nu_{max}$ (neat)/cm$^{-1}$ 1593, 1519, 1344, 1307, 1105, 862. $\delta_H$ ($CDCl_3$) 3.20–3.31 (m, 2H), 3.98–4.0 (m, 1H), 4.51–4.58 (m, 1H), 6.12 (s, 1H), 7.59 (d, *J* 6, 2H), 8.20 (d, *J* 6, 2H). $\delta_C$ ($CDCl_3$) 34.5, 72.8, 85.8, 124.1 (2C), 124.2, 127.5 (2C), 147.4.
**Entry 5:** $\nu_{max}$ (KBr)/cm$^{-1}$ 591, 1514, 1288, 1020. $\delta_H$ ($CDCl_3$) 3.35–3.55 (m, 4H), 5.64 (s, 1H), 7.67 (d, *J* 9, 2H), 8.14 (d, *J* 9, 2H). $\delta_C$ ($CDCl_3$) 40.9 (2C), 55.3, 124.1(2C), 129.2 (2C), 147.7, 149.1.
**Entry 6:** $\nu_{max}$ (neat)/cm$^{-1}$ 1601, 1502, 1301, 861. $\delta_H$ ($CDCl_3$) 3.18–3.29 (m, 2H), 3.80 (s, 3H), 3.89–3.96 (m,1H), 4.48–4.52 (m,1H), 6.00 (s, 1H), 6.86 (d, *J* 6, 2H), 7.41 (d, *J* 6, 2H).
**Entry 7:** IR (KBr)/cm$^{-1}$ 1606, 1506, 1247, 1178, 1029. $\delta_H$ ($CDCl_3$) 2.14–2.31 (m, 2H), 2.86–3.15 (m, 4H), 3.79 (s, 3H), 5.13 (s, 1H), 6.85 (d, *J* 6.84, 2H), 7.38 (d, *J* 6.84, 2H).
**Entry 8:** $\nu_{max}$ (neat)/cm$^{-1}$ 1733, 1681, 1580, 1170, 826. $\delta_H$ ($CDCl_3$) 2.31 (s, 3H), 3.14–3.32 (m, 2H), 3.81–3.91 (m, 1H), 4.35–4.49 (m, 1H), 6.01 (s, 1H), 6.91 (d, *J* 6, 2H), 7.52 (d, *J* 6, 2H).
**Entry 9:** $\nu_{max}$ (KBr)/cm$^{-1}$ 1606,1508, 1421, 1247. $\delta_H$ ($CDCl_3$) 3.21–3.31 (m, 2H), 3.37–3.47 (m, 2H), 4.46–4.48 (m, 2H), 5.22–5.39 (m, 2H), 5.59 (s, 1H), 5.93–6.06 (m, 1H), 6.81 (d, *J* 8.7, 2H), 7.40 (d, *J* 8.7, 2H). $\delta_C$ ($CDCl_3$) 40.7 (2C), 56.5, 69.3, 115.1 (2C), 118.0, 129.6 (2C), 132.5, 133.7, 158.8.
**Entry 10:** $\nu_{max}$ (KBr)/cm$^{-1}$ 1610, 1487, 1444. $\delta_H$ ($CDCl_3$) 3.51–3.57 (m, 2H), 3.67–3.75 (m, 2H), 5.83 (s, 1H), 6.17 (s, 2H), 6.93 (d, *J* 7.98, 1H), 7.15–7.18 (m, 1H), 7.33 (s, 1H). $\delta_C$ ($CDCl_3$) 40.7, 56.8 (2C), 101.6, 108.1, 108.7, 121.8, 134.3, 147.8, 148.3.
**Entry 11:** $\nu_{max}$ (neat)/cm$^{-1}$ 1506, 1456, 1363, 1159, 758. $\delta_H$ ($CDCl_3$) 3.07–3.21 (m, 2H), 3.86–3.94 (m, 1H), 4.36–4.43 (m, 1H), 5.70 (d, *J* 6, 1H), 6.65 (d, *J* 15.81, 1H), 7.23–7.56 (m, 6H). $\delta_C$ ($CDCl_3$) 34.1, 71.5, 86.6, 127.2 (2C), 127.3, 128.5, 129.0 (2C), 132.6, 136.3.
**Entry 12:** $\nu_{max}$ (neat)/cm$^{-1}$ 1501, 1398, 1122, 821. $\delta_H$ ($CDCl_3$) 2.12 (m, 3H), 3.36–3.53 (m, 4H), 4.81–4.95 (m, 2H), 5.54 (d, *J* 6, 1H).
**Entry 13:** $\nu_{max}$ (neat)/cm$^{-1}$ 2911, 1425, 1251, 822, 720. $\delta_H$ ($CDCl_3$) 3.29–3.48 (m, 4H), 5.6 (s, 1H), 6.32–6.34 (m, 1H), 6.44 (d, *J* 3.18, 1H), 7.42(d, *J* 1.35, 1H). $\delta_C$ ($CDCl_3$) 39.5 (2C), 47.9, 107.4, 110.7, 142.9, 154.6.
**Entry 14:** $\nu_{max}$ (neat)/cm$^{-1}$ 2920, 1411, 1269, 852, 702. $\delta_H$ ($CDCl_3$) 3.01–3.52 (m, 4H), 5.94 (s, 1H), 6.94–6.96 (m, 1H), 7.07–7.11 ( m, 1H), 7.22–7.28 (m, 1H). $\delta_C$ ($CDCl_3$) 39.9 (2C), 50.7, 125.5, 125.6, 126.5, 146.9.
**Entry 15:** $\nu_{max}$ (neat)/cm$^{-1}$ 1463, 1274, 821. $\delta_H$ ($CDCl_3$) 0.83 (t, *J* 6.51, 3H), 1.22 (broad, 14H), 1.76 (q, *J* 7.59, 2H), 3.11–3.20 (m, 4H), 4.41 (t, *J* 7.08, 1H). $\delta_C$ ($CDCl_3$) 14.5, 23.0, 29.6 (2C), 29.7, 29.8, 29.9, 32.3, 38.7, 39.7 (2C), 54.2.
**Entry 18:** $\nu_{max}$ (KBr)/cm$^{-1}$ 1701,1656, 1602, 1402, 1265, 923. $\delta_H$ ($CDCl_3$) 2.15 (s, 3H), 3.39–3.48 (m, 4H), 5.61 (s, 1H), 7.43 (d, *J* 6.57, 2H), 7.66 (d, *J* 6.57, 2H).