

Accessory Material

IR, ¹H, and ¹³C NMR data of all the known products in Table 1 and Table 2 in order of their entries are given below

1-Phenylsulfanyloctan-2-ol (entry 1, Table 1)

Obtained as a colourless liquid. ν_{\max} (neat)/cm⁻¹ 1438, 1481, 3408. δ_{H} (CDCl₃) 0.86-0.90 (m, 3H), 1.28-1.36 (m, 8H), 1.45-1.57 (m, 2H), 2.43 (br s, 1H), 2.85 (dd, *J* 8.6, 13.6, 1H), 3.15 (dd, *J* 3.5, 13.6, 1H), 3.63-3.71 (m, 1H), 7.18-7.41 (m, 5H). δ_{C} (CDCl₃) 14.4, 22.9, 26.0, 29.6, 32.1, 36.5, 42.5, 69.7, 126.9, 129.4 (2C), 130.3 (2C), 135.8.

1-Benzylsulfanyloctan-2-ol (entry 3, Table 1)

Obtained as a light yellow liquid. ν_{\max} (neat)/cm⁻¹ 1430, 1470, 3420. δ_{H} 0.88 (t, *J* 6.4, 3H), 1.28-1.54 (m, 10H), 2.32-2.43 (m, 1H), 2.61-2.64 (m, 1H), 3.58-3.68 (m, 1H), 3.73 (s, 2H), 7.24-7.39 (m, 5H). δ_{C} 14.4, 22.9, 25.9, 26.0, 29.5, 32.1, 36.6, 39.6, 69.6, 127.5, 129.0 (2C), 129.2 (2C), 130.4.

3-Chloro-1-phenylsulfanylpropan-2-ol (entry 4, Table 1)

Obtained as a colourless liquid. ν_{\max} (neat)/cm⁻¹ 1434, 1479, 3419. δ_{H} 2.70 (br s, 1H), 3.04-3.20 (m, 2H), 3.63-3.72 (m, 2H), 3.89-3.87 (m, 1H), 7.20-7.42 (m, 5H). δ_{C} 38.6, 48.4, 70.0, 127.3, 129.6 (2C), 130.4 (2C), 135.1.

1-Benzylsulfanyl-3-chloropropan-2-ol (entry 5, Table 1)

Obtained as a light yellow liquid. ν_{\max} (neat)/cm⁻¹ 1430, 1478, 3419. δ_{H} 2.60 (br s, 1H), 3.05-3.24 (m, 2H), 3.62-3.71 (m, 2H), 3.75 (s, 2H), 3.90-3.98 (m, 1H), 7.22-7.44 (m, 5H). δ_{C} 36.6, 38.5, 48.4, 70.2, 127.5, 130.0 (2C), 130.9 (2C), 134.9.

1-Phenoxy-3-phenylsulfanylpropan-2-ol (entry 6, Table 1)

Obtained as a light yellow liquid. ν_{\max} (neat)/cm⁻¹ 1436, 1476, 3421. δ_{H} 2.78 (brd s, 1H), 3.16-3.33 (m, 2H), 4.05-4.12 (m, 2H), 4.15-4.24 (m, 1H), 6.92-7.03 (m, 4H), 7.26-7.46

(m, 6H). δ_{C} 37.9, 69.2, 70.5, 114.9 (2C), 121.6 (2C), 126.9, 129.5, 129.9 (2C), 130.1 (2C), 135.6.

2-Phenylsulfanylcyclohexanol (entry 9, Table 1)

Obtained as a colourless liquid. ν_{max} (neat)/ cm^{-1} 1440, 1475, 3422. δ_{H} 1.22-1.36 (m, 4H), 1.66-1.74 (m, 2H), 2.08-2.16 (m, 2H), 2.75-2.83 (m, 1H), 2.90 (br s, 1H), 3.30-3.38 (m, 1H), 7.26-7.49 (m, 5H). δ_{C} 24.6, 26.5, 30.0, 34.2, 56.8, 72.4, 128.0, 129.2 (2C), 133.0, 134.1 (2C).

2-Phenylsulfanylcycloheptanol (entry 11, Table 1)

Obtained as a colourless liquid. ν_{max} (neat)/ cm^{-1} 1434, 1479, 3415. δ_{H} 1.33-1.70 (m, 6H), 1.81-1.83 (m, 2H), 2.08-2.10 (m, 2H), 3.01-3.16 (m, 1H), 3.56-3.62 (m, 1H), 7.16-7.40 (m, 5H). δ_{C} 24.2, 26.4, 27.0, 31.1, 32.3, 58.1, 73.6, 127.9, 129.4 (2C), 130.4, 133.2 (2C).

2-Phenylsulfanylcyclooctanol (entry 12, Table 1)

Obtained as a colourless liquid. ν_{max} (neat)/ cm^{-1} 1436, 1480, 3435. δ_{H} 1.20-1.96 (m, 12H), 3.38-3.42 (m, 1H), 3.85-3.88 (m, 1H), 7.20-7.52 (m, 5H), δ_{C} 21.7, 26.2, 27.8, 28.6, 34.4, 44.2, 55.1, 70.8, 127.5, 129.4 (2C), 132.2 (2C), 135.3.

1-Phenylsulfanylpropan-2-one (entries 1 and 3, Table 2)

Obtained as a colourless liquid. ν_{max} (neat)/ cm^{-1} 1230, 1438, 1481, 1583, 1709. δ_{H} 2.27 (s, 3H), 3.67 (s, 2H), 7.21-7.32 (m, 3H), 7.33-7.36 (m, 2H). δ_{C} 27.8, 44.5, 126.7, 129.0 (2C), 129.3 (2C), 134.6, 203.3.

2-Ethylsulfanyl-1-phenylethanone (entry 4, Table 2)

Obtained as a colourless liquid. ν_{max} (neat)/ cm^{-1} 1276, 1448, 1596, 1674. δ_{H} 1.28 (t, *J* 7.5, 3H), 2.60 (q, *J* 7.5, 2H), 3.81 (s, 2H), 7.45-7.61 (m, 3H), 7.98-8.01 (m, 2H). δ_{C} 14.0, 26.1, 36.6, 128.3 (2C), 128.6 (2C), 133.1, 135.0, 194.4.

2-Butylsulfanyl-1-phenylethanone (entries 5, 9, Table 2)

Obtained as a colourless liquid. ν_{\max} (neat)/ cm^{-1} 1276, 1448, 1481, 1596, 1674. δ_{H} 0.88 (t, J 7.2, 3H), 1.31-1.43 (m, 2H), 1.51-1.61 (m, 2H), 2.55 (t, J 7.2, 2H), 3.77 (s, 2H), 7.42-7.58 (m, 3H), 7.95-7.98 (m, 2H). δ_{C} 13.5, 21.7, 30.8, 31.9, 36.9, 128.5 (2C), 128.6 (2C), 133.1, 135.1, 194.4.

1-Phenyl-2-phenylsulfanylethanone (entries 7, 10, 12, in Table 2, and entry 13 in Table 1) Obtained as a pale yellow, low-melting solid, mp 50-52°C. ν_{\max} (KBr)/ cm^{-1} 1274, 1446, 1481, 1596, 1682. δ_{H} 4.30 (s, 2H), 7.14-7.31 (m, 4H), 7.39-7.51 (m, 4H), 7.95-7.98 (m, 2H). δ_{C} 41.2, 127.1, 127.3, 128.4 (2C), 128.7, 128.9 (2C), 129.3 (2C), 129.4, 130.5 (2C), 194.1.

2-Benzylsulfanyl-1-phenylethanone (entry 8, Table 2)

Obtained as a pale yellow solid, mp 84-86°C. ν_{\max} (KBr)/ cm^{-1} 1292, 1450, 1492, 1595, 1672. δ_{H} 3.70 (s, 2H), 3.79 (s, 2H), 7.28-7.40 (m, 5H), 7.46-7.60 (m, 3H), 7.94-7.97 (m, 2H). δ_{C} 35.7, 35.9, 127.1, 128.4 (2C), 128.5 (2C), 128.6 (2C), 129.2 (2C), 133.2, 135.3, 137.1, 194.3.

2-Phenylsulfanyl-1-p-tolylethanone (entry 13, Table 2)

Obtained as a yellow, low-melting solid, mp 38-40°C. ν_{\max} (KBr)/ cm^{-1} 1438, 1478, 1592, 1677. δ_{H} 2.44 (s, 3H), 4.28 (s, 2H), 7.23-7.33 (m, 5H), 7.39-7.43 (m, 2H), 7.87 (d, J 8.1, 2H). δ_{C} 21.5, 41.0, 126.8, 127.2, 128.0, 128.6 (2C), 128.8 (2C), 129.2 (2C), 130.3 (2C), 135.6, 193.6.

1-(4-Methoxyphenyl)-2-phenylsulfanylethanone (entry 14, Table 2)

Obtained as a yellow, low-melting solid, mp 42-44°C. ν_{\max} (KBr)/ cm^{-1} 1438, 1478, 1592, 1678. δ_{H} 3.86 (s, 3H), 4.24 (s, 2H), 6.92 (d, J 8.7, 2H), 7.20-7.28 (m, 3H), 7.31-7.38 (m, 2H), 7.93 (d, J 8.7, 2H). δ_{C} 40.8, 55.4, 113.6 (2C), 126.8, 128.9 (2C), 129.7 (2C), 130.9 (2C), 134.9, 141.1, 163.6, 192.6.

2-Phenylsulfanylcyclohex-2-enone (entry 17, Table 2)

Obtained as a colourless liquid. ν_{\max} (neat)/ cm^{-1} 1439, 1477, 1591, 1776. δ_{H} 1.98-2.06 (m, 2H), 2.35-2.40 (m, 2H), 2.54-2.58 (m, 2H), 6.48 (t, J 4.5, 1H), 7.32-7.39 (m, 3H), 7.41-7.44 (m, 2H). δ_{C} 22.7, 27.0, 38.5, 128.2, 129.3 (2C), 131.8, 133.7 (2C), 137.3, 145.0, 195.2.

3,5,5-Trimethyl-2-phenylsulfanylcyclohex-2-enone (entry 19, Table 2)

Obtained as colourless liquid. ν_{\max} (neat)/ cm^{-1} 1269, 1439, 1477, 1585, 1677. δ_{H} 1.10 (s, 6H), 2.27 (s, 3H), 2.44 (s, 2H), 2.52 (s, 2H), 7.11-7.17 (m, 3H), 7.20-7.25 (m, 2H). δ_{C} 24.6, 28.3 (2C), 32.7, 48.2, 51.7, 125.5, 127.5 (2C), 128.6, 128.8 (2C), 136.7, 167.0, 194.8.