**TO DETERMINE MASS SUSCEPTIBILITY OF STINGAMIRES SM04 SLAG SAMPLES**

| Calibration samples | Mass g | Bridge reading | Total susceptibility $k_T \times 10^{-8}$ $m^3$ | Mass susceptibility $\chi \times 10^{-8}$ $m^3$ $kg^{-1}$ |
|---|---|---|---|---|
| Manganese sulphate | 50.00 | 61.9 | 4.06 | 81.2 |
| High alumina cement | 50.00 | 535 | 35.80 | 716 |
| Test samples | | | | |
| 201-A | 39.40 | 116 | 7.69 | 195 |
| 201-B | 33.37 | 172 | 11.45 | 343 |
| 201-C | 29.29 | 111 | 7.35 | 251 |
| 201-D | 28.09 | 547 | 36.61 | 1303 |
| 201-E | 13.47 | 50.9 | 3.34 | 248 |
| 202-A | 48.30 | 583 | 39.02 | 808 |
| 202-B | 30.50 | 208 | 13.86 | 454 |
| 202-C | 26.34 | 162 | 10.78 | 409 |
| 202-D | 18.44 | 135 | 8.96 | 486 |
| 203-A | 47.50 | 605 | 40.50 | 853 |
| 203-B | 40.76 | 98 | 6.48 | 159 |
| 203-C | 30.17 | 221 | 14.73 | 488 |
| 203-D | 19.19 | 96 | 6.35 | 331 |
| 203-E | 12.20 | 36.9 | 2.42 | 198 |
| 203-F | 15.34 | 165 | 10.98 | 716 |
| 203-G | 16.12 | 80 | 5.27 | 327 |
| 203-H | 13.15 | 117 | 7.76 | 590 |
| 210-A | 30.18 | 244 | 16.28 | 539 |
| 210-B | 20.29 | 398 | 26.61 | 1311 |
| 210-C | 18.29 | 700 | 46.87 | 2563 |
| 210-D | 30.43 | 71 | 4.67 | 153 |
| 210-E | 20.90 | 162 | 10.78 | 516 |
| 210-F | 24.36 | 108 | 7.15 | 294 |
| 210-G | 27.67 | 431 | 28.82 | 1042 |
| 210-H | 16.87 | 158 | 10.51 | 623 |
| 210-I | 17.19 | 171 | 11.38 | 662 |
| 210-J | 16.23 | 31.3 | 2.05 | 126 |
| 210-K | 12.74 | 140 | 9.30 | 730 |
| 210-L | 14.76 | 149 | 9.90 | 671 |
| 213-A | 44.39 | 777 | 52.04 | 1172 |
| 213-B | 29.56 | 205 | 13.66 | 462 |
| 213-C | 32.91 | 319 | 21.31 | 647 |
| 213-D | 29.58 | 184 | 12.25 | 414 |
| 213-E | 22.81 | 241 | 16.08 | 705 |
| 213-F | 19.43 | 215 | 14.33 | 738 |

| | | | | |
|---|---|---|---|---|
| 223-A | 64.20 | 590 | 39.49 | 615 |
| 223-B | 37.64 | 321 | 21.44 | 570 |
| 223-C | 37.64 | 465 | 31.10 | 826 |
| 223-D | 27.30 | 339 | 22.65 | 830 |
| 223-E | 30.98 | 255 | 17.01 | 549 |
| 223-F | 18.11 | 257 | 17.15 | 947 |
| 223-G | 11.29 | 103 | 6.82 | 604 |
| 223-H | 4.45 | 59.9 | 3.93 | 883 |
| 401-A | 30.19 | 177 | 11.78 | 390 |
| 401-B | 35.22 | 106 | 7.02 | 199 |
| 401-C | 28.09 | 107 | 7.09 | 252 |
| 401-D | 28.41 | 87 | 5.74 | 202 |
| 401-E | 35.22 | 49.7 | 3.26 | 93 |
| 401-F | 23.94 | 60.0 | 3.94 | 164 |
| 401-G | 25.87 | 96 | 6.35 | 245 |
| 401-H | 17.71 | 23.5 | 1.54 | 87 |
| 403-A | 38.18 | 355 | 23.72 | 621 |
| 403-B | 32.37 | 223 | 14.87 | 459 |
| 403-C | 27.98 | 263 | 17.55 | 627 |
| 403-D | 21.70 | 105 | 6.95 | 320 |
| 403-E | 22.97 | 147 | 9.77 | 425 |
| 404 | 11.18 | 8.0 | 0.52 | 47 |

| | | | |
|---|---|---|---|
| Mean | ) | | 552 |
| Median | ) | | 488 |
| Standard Deviation | +/- ) | | 404 |

Chart data

| Total sus. | Meter | Total sus. | Meter |
|---|---|---|---|
| 0 | 0 | | |
| 4.06 | 61.9 | 4.06 | 61.9 |
| | | 35.80 | 535 |

Slope & constant values as calculated by data trendline:

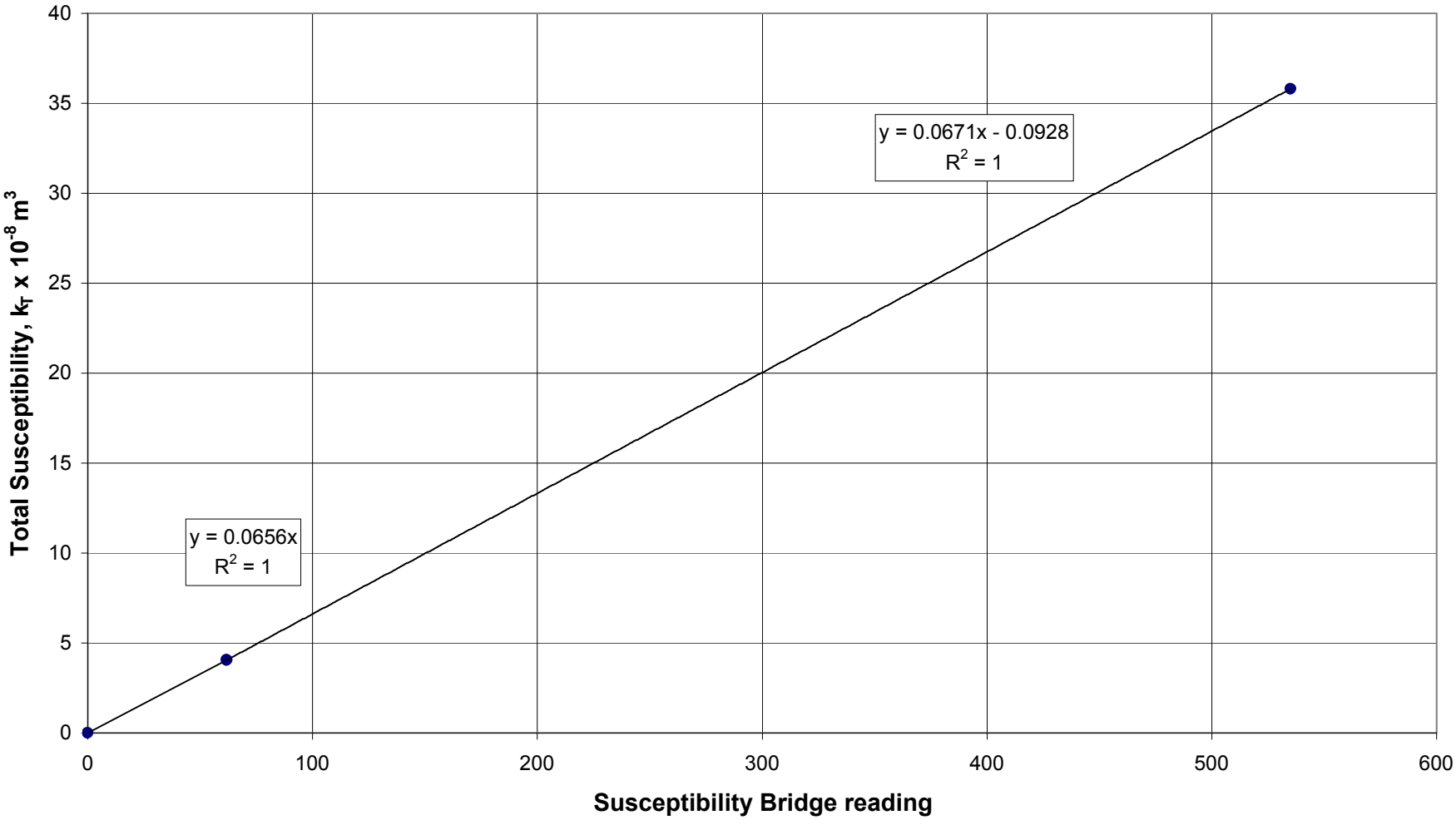
| m | c | x | y |
|---|---|---|---|
| 0.0656 | 0 | 61.9 | 4.0606 |
| 0.0671 | -0.0928 | 61.9 | 4.0607 |
| 0.0671 | -0.0928 | 535 | 35.8057 |

Slope & constant values as calculated from raw data:

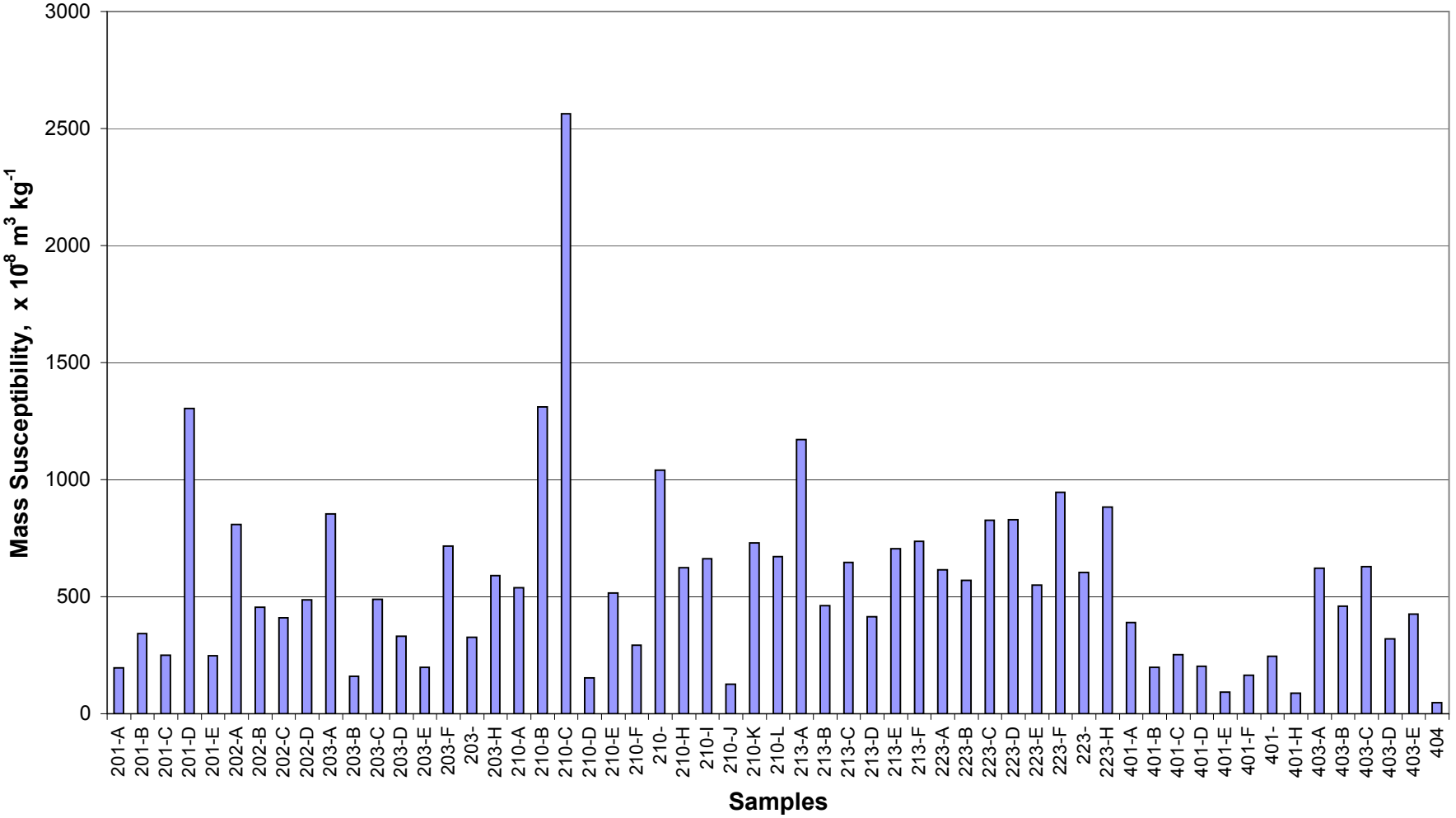
| m | c | x | y |
|---|---|---|---|
| 0.06559 | 0 | 61.9 | 4.06 |
| 0.06709 | -0.09283 | 61.9 | 4.06 |
| 0.06709 | -0.09283 | 535 | 35.80 |

Above slope & constant values used in formula to calculate total susceptibility from the corresponding meter reading.

# SM04 SLAG SAMPLES SUSCEPTIBILITY CALIBRATION CURVE



# SM04 SLAG SAMPLES MASS SUSCEPTIBILITY



**TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY OF STINGAMIRES SM04 SLAG SAMPLES**

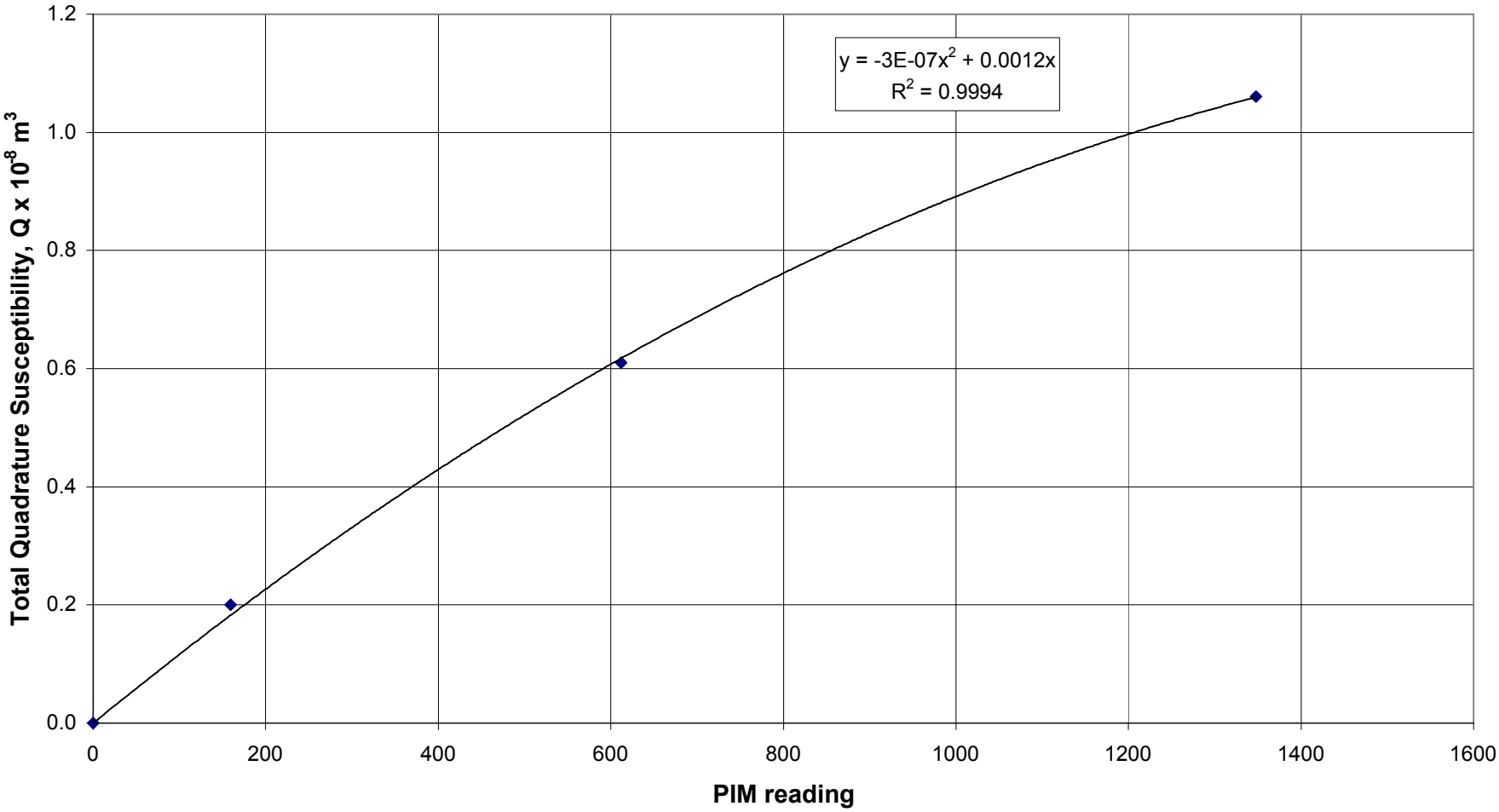
| Calibration samples | Mass g | PIM reading | Total quad. sus. Q x $10^{-8}$ $m^3$ | Mass quad. sus. q x $10^{-8}$ $m^3$ $kg^{-1}$ | Magnetic viscosity % |
|---|---|---|---|---|---|
| High alumina cement | 50.00 | 159 | 0.20 | 4.0 | |
| BS87 | 50.00 | 612 | 0.61 | 12.2 | |
| BS62 | 40.64 | 1348 | 1.06 | 26.1 | |
| Test samples | | | | | |
| 201-A | 39.40 | 98 | 0.11 | 3 | 1.5 |
| 201-B | 33.37 | 54 | 0.06 | 2 | 0.6 |
| 201-C | 29.29 | 76 | 0.09 | 3 | 1.2 |
| 201-D | 28.09 | 176 | 0.20 | 7 | 0.6 |
| 201-E | 13.47 | 39 | 0.05 | 3 | 1.4 |
| 202-A | 48.30 | 229 | 0.26 | 5 | 0.7 |
| 202-B | 30.50 | 132 | 0.15 | 5 | 1.1 |
| 202-C | 26.34 | 75 | 0.09 | 3 | 0.8 |
| 202-D | 18.44 | 104 | 0.12 | 7 | 1.4 |
| 203-A | 47.50 | 284 | 0.32 | 7 | 0.8 |
| 203-B | 40.76 | 34 | 0.04 | 1 | 0.6 |
| 203-C | 30.17 | 176 | 0.20 | 7 | 1.4 |
| 203-D | 19.19 | 48 | 0.06 | 3 | 0.9 |
| 203-E | 12.20 | 15 | 0.02 | 1 | 0.7 |
| 203-F | 15.34 | 33 | 0.04 | 3 | 0.4 |
| 203-G | 16.12 | 40 | 0.05 | 3 | 0.9 |
| 203-H | 13.15 | 58 | 0.07 | 5 | 0.9 |
| 210-A | 30.18 | 172 | 0.20 | 7 | 1.2 |
| 210-B | 20.29 | 328 | 0.36 | 18 | 1.4 |
| 210-C | 18.29 | 1340 | 1.07 | 58 | 2.3 |
| 210-D | 30.43 | 10 | 0.01 | 0 | 0.3 |
| 210-E | 20.90 | 89 | 0.10 | 5 | 1.0 |
| 210-F | 24.36 | 75 | 0.09 | 4 | 1.2 |
| 210-G | 27.67 | 160 | 0.18 | 7 | 0.6 |
| 210-H | 16.87 | 72 | 0.08 | 5 | 0.8 |
| 210-I | 17.19 | 154 | 0.18 | 10 | 1.6 |
| 210-J | 16.23 | 18 | 0.02 | 1 | 1.0 |
| 210-K | 12.74 | 79 | 0.09 | 7 | 1.0 |
| 210-L | 14.76 | 41 | 0.05 | 3 | 0.5 |
| 213-A | 44.39 | 1960 | 1.20 | 27 | 2.3 |
| 213-B | 29.56 | 73 | 0.09 | 3 | 0.6 |
| 213-C | 32.91 | 95 | 0.11 | 3 | 0.5 |
| 213-D | 29.58 | 66 | 0.08 | 3 | 0.6 |
| 213-E | 22.81 | 67 | 0.08 | 3 | 0.5 |
| 213-F | 19.43 | 58 | 0.07 | 4 | 0.5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 223-A | | 64.20 | 216 | 0.25 | 4 | 0.6 |
| 223-B | | 37.64 | 158 | 0.18 | 5 | 0.8 |
| 223-C | | 37.64 | 169 | 0.19 | 5 | 0.6 |
| 223-D | | 27.30 | 103 | 0.12 | 4 | 0.5 |
| 223-E | | 30.98 | 85 | 0.10 | 3 | 0.6 |
| 223-F | | 18.11 | 69 | 0.08 | 4 | 0.5 |
| 223-G | | 11.29 | 55 | 0.07 | 6 | 1.0 |
| 223-H | | 4.45 | 25 | 0.03 | 7 | 0.8 |
| 401-A | | 30.19 | 129 | 0.15 | 5 | 1.3 |
| 401-B | | 35.22 | 116 | 0.14 | 4 | 1.9 |
| 401-C | | 28.09 | 80 | 0.09 | 3 | 1.3 |
| 401-D | | 28.41 | 26 | 0.03 | 1 | 0.5 |
| 401-E | | 35.22 | 16 | 0.02 | 1 | 0.6 |
| 401-F | | 23.94 | 40 | 0.05 | 2 | 1.2 |
| 401-G | | 25.87 | 50 | 0.06 | 2 | 0.9 |
| 401-H | | 17.71 | 9 | 0.01 | 1 | 0.7 |
| 403-A | | 38.18 | 334 | 0.37 | 10 | 1.5 |
| 403-B | | 32.37 | 150 | 0.17 | 5 | 1.2 |
| 403-C | | 27.98 | 133 | 0.15 | 6 | 0.9 |
| 403-D | | 21.70 | 67 | 0.08 | 4 | 1.1 |
| 403-E | | 22.97 | 45 | 0.05 | 2 | 0.5 |
| 404 | | 11.18 | 2 | 0.00 | 0 | 0.5 |
| | | | | | | |
| Mean | | ) | | | 6 | 0.9 |
| Median | | ) | | | 4 | 0.8 |
| Standard Deviation | +/- | ) | | | 8 | 0.4 |

Chart data

| Total quad. | PIM |
|---|---|
| 0 | 0 |
| 0.20 | 159 |
| 0.61 | 612 |
| 1.06 | 1348 |

# SM04 SLAG SAMPLES QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



# SM04 SLAG SAMPLES MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY