Supplemental Table 1. Estimates for k and estimated risks for chemicals with the MRL derived from benchmark doses when the risk at the MRL is =10-4 – 10-6 or when k=1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Substance | Type1 | MRL2  | POD |

|  |
| --- |
| Risk at MRL, K=1 |
|

 |

|  |
| --- |
| Upper Risk at MRL, K=1 |
|

 | Risk at MRL = 10-4 | Risk at MRL = 10-5 | Risk at MRL = 10-6 |
| k | Upper Bound Risk  | k | Upper Bound Risk  | k | Upper Bound Risk  |
| Chromium (VI) | O,C,Q | 0.001 | BMDL | 8.78E-04 | 1.17E-03 | 1.45 | 1.52E-04 | 1.93 | 1.74E-05 | 2.42 | 2.00E-06 |
| [1,1,2,2-Tetrachloroethane](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Tetrachloroethane Oral Int '!A1) | O,I,Q | 0.5 | BMDL | 6.35E-04 | 9.77E-04 | 1.36 | 1.80E-04 | 1.81 | 2.18E-05 | 2.26 | 2.65E-06 |
| [1,3-Dichloropropene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'1,3-Dichloropropene Oral Int'!A1) | O,I,Q | 0.04 | BMDL | 4.68E-04 | 1.18E-03 | 1.28 | 3.28E-04 | 1.71 | 4.86E-05 | 2.14 | 7.20E-06 |
| [Cresols](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cresols Oral Int'!A1) | O,I,Q | 0.1 | BMDL | 1.89E-04 | 7.56E-04 | 1.10 | 4.61E-04 | 1.46 | 7.64E-05 | 1.83 | 1.27E-05 |
| [Ethylene Glycol](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Ethylene glycol Oral Acute'!A1) | O,A,Q | 0.8 | BMDL | 8.48E-04 | 1.11E-03 | 1.44 | 1.48E-04 | 1.92 | 1.69E-05 | 2.40 | 1.93E-06 |
| Tris(2-Chloroethyl) Phosphate | O,I,Q | 0.6 | BMDL | 6.17E-04 | 1.04E-03 | 1.35 | 2.03E-04 | 1.80 | 2.56E-05 | 2.25 | 3.24E-06 |
| O,C,Q | 0.3 | BMDL | 8.33E-04 | 1.23E-03 | 1.44 | 1.74E-04 | 1.91 | 2.09E-05 | 2.39 | 2.52E-06 |
| Tributyl Phosphate | O,A,Q | 1.1 | BMDL | 8.89E-04 | 1.04E-03 | 1.46 | 1.26E-04 | 1.94 | 1.35E-05 | 2.42 | 1.46E-06 |
| O,I,Q | 0.02 | BMDL | 6.38E-04 | 1.07E-03 | 1.36 | 2.03E-04 | 1.81 | 2.57E-05 | 2.27 | 3.25E-06 |
| Tris(2-Butoxyethyl) Phosphate | O,A,Q | 4.8 | BMDL | 6.13E-04 | 1.06E-03 | 1.35 | 2.10E-04 | 1.80 | 2.68E-05 | 2.25 | 3.42E-06 |
| O,I,Q | 0.2 | BMDL | 2.61E-04 | 9.61E-04 | 1.16 | 4.53E-04 | 1.54 | 7.47E-05 | 1.93 | 1.23E-05 |
| Tris(1,3-Dichloro-2-Propyl) Phosphate | O,I,C | 0.05 | BMDL | 3.94E-04 | 1.17E-03 | 1.25 | 3.89E-04 | 1.66 | 6.09E-05 | 2.07 | 9.55E-06 |
| O,C,Q | 0.02 | BMDL | 8.10E-04 | 1.09E-03 | 1.43 | 1.52E-04 | 1.90 | 1.75E-05 | 2.38 | 2.01E-06 |
| Monomethylarsonic Acid | O,C,Q | 0.01 | BMDL | 4.79E-04 | 1.05E-03 | 1.29 | 2.77E-04 | 1.72 | 3.87E-05 | 2.14 | 5.42E-06 |
| Dimethylarsinic Acid | O,C,Q | 0.02 | BMDL | 5.04E-04 | 9.66E-04 | 1.30 | 2.34E-04 | 1.73 | 3.09E-05 | 2.16 | 4.09E-06 |
| Acrylamide | O,A,Q | 0.02 | BMDL | 7.86E-04 | 1.17E-03 | 1.42 | 1.76E-04 | 1.89 | 2.12E-05 | 2.36 | 2.56E-06 |
| [Toxaphene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Toxaphene Oral Int'!A1) | O,I,Q | 0.002 | BMDL | 1.37E-04 | 5.13E-04 | 1.05 | 4.02E-04 | 1.44 | 6.72E-05 | 1.83 | 1.12E-05 |
| [Uranium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Uranium Oral Acute'!A1) | O,A,Q | 0.002 | BMDL | 8.63E-04 | 1.18E-03 | 1.45 | 1.58E-04 | 1.93 | 1.84E-05 | 2.41 | 2.14E-06 |
| [2-Methylnaphthalene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'2-Methylnaphthalene Oral Chroni'!A1) | O,C,Q | 0.04 | BMDL | 6.20E-04 | 9.57E-04 | 1.36 | 1.80E-04 | 1.80 | 2.19E-05 | 2.25 | 2.67E-06 |
| Barium, Soluble Salts | O,C,Q | 0.2 | BMDL | 3.17E-04 | 4.77E-04 | 1.23 | 1.65E-04 | 1.68 | 1.99E-05 | 2.13 | 2.39E-06 |
| Boron And Compounds | O,I,Q | 0.2 | BMDL | 1.28E-04 | 1.68E-04 | 1.04 | 1.32E-04 | 1.43 | 1.47E-05 | 1.81 | 1.63E-06 |
| [Cadmium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cadmium Oral Int'!A1) | O,I,C | 0.0005 | BMDL | 7.49E-04 | 9.95E-04 | 1.48 | 1.52E-04 | 2.02 | 1.78E-05 | 2.57 | 2.08E-06 |
| [Vanadium Compounds](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Vanadium inh oral'!A1)3 | Ih,C,Q | 0.0001 | BMCL | 2.32E-03 | 3.50E-03 | 1.82 | 2.12E-04 | 2.43 | 2.72E-05 | 3.03 | 3.48E-06 |
| Benzene (EPA) 3 | Ih, C, C | 0.03 | BMCL | 2.03E-04 | 3.85E-04 | 1.11 | 2.05E-04 | 1.48 | 2.59E-05 | 1.85 | 3.28E-06 |
| 1,3 Butadiene (EPA)4 | Ih, C, C | 0.0009 | BMCL | 9.48E-05 | 1.08E-04 | 0.99 | 1.14E-04 | 1.32 | 1.18E-05 | 1.65 | 1.23E-06 |

1 Entries are route, length of exposure, data where route is oral (O), inhalation (Ih); length is acute (A), intermediate (I), chronic (C); data is quantal (Q), continuous (C).

 2 mg/kg/day.

 3 Exposure entries here are mg/cubic meter.

 4 Exposure entries here are part-per-million (ppm)

Supplemental Table 2: Relative Risk Ratios (RR) at exposures two times the MRL for three different assumed values for risk at the MRL ()

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Substance | Type1 | POD | =10-6 | =10-5 | =10-4 |
| k | RR | k | RR | k | RR |
| Chromium (VI) | O,C,Q | BMD | 2.42 | 5.34 | 1.93 | 3.82 | 1.45 | 2.74 |
| [1,1,2,2-Tetrachloroethane](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Tetrachloroethane Oral Int '!A1) | O,I,Q | BMD | 2.26 | 4.80 | 1.81 | 3.51 | 1.36 | 2.57 |
| [1,3-Dichloropropene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'1,3-Dichloropropene Oral Int'!A1) | O,I,Q | BMD | 2.14 | 4.39 | 1.71 | 3.27 | 1.28 | 2.44 |
| [Cresols](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cresols Oral Int'!A1) | O,I,Q | BMD | 1.83 | 3.55 | 1.46 | 2.76 | 1.10 | 2.14 |
| [Ethylene Glycol](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Ethylene glycol Oral Acute'!A1) | O,A,Q | BMD | 2.40 | 5.27 | 1.92 | 3.79 | 1.44 | 2.72 |
| Tris(2-Chloroethyl) Phosphate | O,I,Q | BMD | 2.25 | 4.76 | 1.80 | 3.49 | 1.35 | 2.56 |
| O,C,Q | BMD | 2.39 | 5.24 | 1.91 | 3.77 | 1.44 | 2.71 |
| Tributyl Phosphate | O,A,Q | BMD | 2.42 | 5.36 | 1.94 | 3.84 | 1.46 | 2.75 |
| O,I,Q | BMD | 2.27 | 4.81 | 1.81 | 3.52 | 1.36 | 2.57 |
| Tris(2-Butoxyethyl) Phosphate | O,A,C | BMD | 2.25 | 4.75 | 1.80 | 3.48 | 1.35 | 2.55 |
| O,I,Q | BMD | 1.93 | 3.80 | 1.54 | 2.92 | 1.16 | 2.23 |
| Tris(1,3-Dichloro-2-Propyl) Phosphate | O,I,C | BMD | 2.07 | 4.20 | 1.66 | 3.15 | 1.25 | 2.37 |
| O,C,Q | BMD | 2.38 | 5.19 | 1.90 | 3.74 | 1.43 | 2.69 |
| Monomethylarsonic Acid | O,C,Q | BMD | 2.16 | 4.48 | 1.73 | 3.33 | 1.30 | 2.47 |
| Dimethylarsinic Acid | O,C,Q | BMD | 2.36 | 5.14 | 1.89 | 3.71 | 1.42 | 2.68 |
| Acrylamide | O,A,Q | BMD | 2.41 | 5.31 | 1.93 | 3.81 | 1.45 | 2.73 |
| [Toxaphene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Toxaphene Oral Int'!A1) | O,I,Q | BMD | 2.25 | 4.76 | 1.80 | 3.49 | 1.36 | 2.56 |
| [Uranium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Uranium Oral Acute'!A1) | O,A,Q | BMD | 1.83 | 3.55 | 1.44 | 2.72 | 1.05 | 2.07 |
| [2-Methylnaphthalene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'2-Methylnaphthalene Oral Chroni'!A1) | O,C,Q | BMD | 2.13 | 4.38 | 1.68 | 3.20 | 1.23 | 2.34 |
| Barium, Soluble Salts | O,C,Q | BMD | 1.81 | 3.51 | 1.43 | 2.69 | 1.04 | 2.06 |
| Boron And Compounds | O,I,Q | BMD | 2.57 | 5.92 | 2.02 | 4.06 | 1.48 | 2.78 |
| [Vanadium Compounds](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Vanadium inh oral'!A1) | Ih,C,Q | BMD | 3.03 | 8.18 | 2.43 | 5.38 | 1.82 | 3.54 |
| [Cadmium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cadmium Oral Int'!A1) | O,I,C | BMD | 2.14 | 4.42 | 1.72 | 3.29 | 1.29 | 2.45 |
| Benzene | Ih,C, C | BMD | 1.85 | 3.60 | 1.48 | 2.79 | 1.11 | 2.16 |
| 1,3 Butadiene | Ih, C, C | BMD | 1.65 | 3.14 | 1.32 | 2.50 | **0.99** | **1.99** |
| Cresols | O,C,N | LOAEL | 2.09 | 4.25 | 1.75 | 3.37 | 1.42 | 2.68 |
| 1,2-Dichloroethylene | Ih,A,N | LOAEL | 1.75 | 3.37 | 1.42 | 2.68 | 1.09 | 2.12 |
| Polybrominated Diphenyl Ethers (PBDEs) | O,I,N | LOAEL | 2.48 | 5.56 | 2.07 | 4.20 | 1.66 | 3.16 |
| Sulfur mustard | O,A | LOAEL | 1.91 | 3.77 | 1.58 | 2.99 | 1.25 | 2.37 |
| O,I,N | LOAEL | 2.49 | 5.63 | 2.09 | 4.24 | 1.68 | 3.20 |
| Ethylbenzene | Ih,I,N | LOAEL | 2.38 | 5.20 | 1.97 | 3.92 | 1.56 | 2.96 |
| Ih,C,N | LOAEL | 2.28 | 4.84 | 1.87 | 3.66 | 1.46 | 2.76 |
| Toluene | Ih,C,N | LOAEL | 2.54 | 5.80 | 2.04 | 4.11 | 1.55 | 2.92 |
| Xylenes | Ih,C,N | LOAEL | 2.14 | 4.41 | 1.73 | 3.32 | 1.32 | 2.50 |

1 Entries are route, length of exposure, data where route is oral (O), inhalation (Ih); length is acute (A), intermediate (I), chronic (C); data is quantal (Q), continuous (C), not applicable (N)

Supplemental Table 3: Relative risk ratios (RR) at exposures five times the MRL for three different assumed values for risk at the MRL ().

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Substance | Type1 | POD | =10-6 | =10-5 | =10-4 |
| k  | RR | k | RR | k | RR |
| Chromium (VI) | O,C,Q | BMD | 2.42 | 48.81 | 1.93 | 22.50 | 1.45 | 10.37 |
| [1,1,2,2-Tetrachloroethane](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Tetrachloroethane Oral Int '!A1) | O,I,Q | BMD | 2.26 | 38.17 | 1.81 | 18.48 | 1.36 | 8.95 |
| [1,3-Dichloropropene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'1,3-Dichloropropene Oral Int'!A1) | O,I,Q | BMD | 2.14 | 31.08 | 1.71 | 15.68 | 1.28 | 7.91 |
| [Cresols](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cresols Oral Int'!A1) | O,I,Q | BMD | 1.83 | 18.96 | 1.46 | 10.55 | 1.10 | 5.87 |
| [Ethylene Glycol](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Ethylene glycol Oral Acute'!A1) | O,A,Q | BMD | 2.40 | 47.48 | 1.92 | 22.01 | 1.44 | 10.20 |
| Tris(2-Chloroethyl) Phosphate | O,I,Q | BMD | 2.25 | 37.38 | 1.80 | 18.18 | 1.35 | 8.84 |
| O,C,Q | BMD | 2.39 | 46.81 | 1.91 | 21.76 | 1.44 | 10.12 |
| Tributyl Phosphate | O,A,Q | BMD | 2.42 | 49.32 | 1.94 | 22.69 | 1.46 | 10.44 |
| O,I,Q | BMD | 2.27 | 38.30 | 1.81 | 18.53 | 1.36 | 8.97 |
| Tris(2-Butoxyethyl) Phosphate | O,A,C | BMD | 2.25 | 37.21 | 1.80 | 18.11 | 1.35 | 8.81 |
| O,I,Q | BMD | 1.93 | 22.26 | 1.54 | 12.00 | 1.16 | 6.47 |
| Tris(1,3-Dichloro-2-Propyl) Phosphate | O,I,C | BMD | 2.07 | 27.96 | 1.66 | 14.41 | 1.25 | 7.42 |
| O,C,Q | BMD | 2.38 | 45.79 | 1.90 | 21.38 | 1.43 | 9.98 |
| Monomethylarsonic Acid | O,C,Q | BMD | 2.16 | 32.59 | 1.73 | 16.29 | 1.30 | 8.14 |
| Dimethylarsinic Acid | O,C,Q | BMD | 2.36 | 44.71 | 1.89 | 20.98 | 1.42 | 9.84 |
| Acrylamide | O,A,Q | BMD | 2.41 | 48.16 | 1.93 | 22.27 | 1.45 | 10.29 |
| [Toxaphene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Toxaphene Oral Int'!A1) | O,I,Q | BMD | 2.25 | 37.50 | 1.80 | 18.22 | 1.36 | 8.85 |
| [Uranium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Uranium Oral Acute'!A1) | O,A,Q | BMD | 1.83 | 19.01 | 1.44 | 10.17 | 1.05 | 5.44 |
| [2-Methylnaphthalene](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'2-Methylnaphthalene Oral Chroni'!A1) | O,C,Q | BMD | 2.13 | 30.94 | 1.68 | 14.93 | 1.23 | 7.20 |
| Barium, Soluble Salts | O,C,Q | BMD | 1.81 | 18.41 | 1.43 | 9.92 | 1.04 | 5.34 |
| Boron And Compounds | O,I,Q | BMD | 2.57 | 62.15 | 2.02 | 25.86 | 1.48 | 10.76 |
| [Vanadium Compounds](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Vanadium inh oral'!A1) | Ih,C,Q | BMD | 3.03 | 131.70 | 2.43 | 49.83 | 1.82 | 18.84 |
| [Cadmium](file:///C%3A%5CDocuments%20and%20Settings%5Crattanasio%5CMy%20Documents%5CTox%20prof%20workshop%20risk%5CRisk%20Based%20MRLs%20Aprl%2072011.xlsx#'Cadmium Oral Int'!A1) | O,I,C | BMD | 2.14 | 31.53 | 1.72 | 15.86 | 1.29 | 7.98 |
| Benzene | Ih,C,C | BMD | 1.85 | 19.62 | 1.48 | 10.84 | 1.11 | 5.99 |
| 1,3 Butadiene | Ih,C,C | BMD | 1.65 | 14.21 | 1.32 | 8.38 | 0.99 | 4.94 |
| Cresols | O,C,N | LOAEL | 2.09 | 28.79 | 1.75 | 16.83 | 1.42 | 9.84 |
| 1,2-Dichloroethylene | Ih,A,N | LOAEL | 1.75 | 16.82 | 1.42 | 9.83 | 1.09 | 5.75 |
| Polybrominated Diphenyl Ethers (PBDEs) | O,I,N | LOAEL | 2.48 | 53.77 | 2.07 | 27.92 | 1.66 | 14.49 |
| Sulfur mustard | O,A,N | LOAEL | 1.91 | 21.75 | 1.58 | 12.72 | 1.25 | 7.44 |
| O,I,N | LOAEL | 2.49 | 55.25 | 2.09 | 28.69 | 1.68 | 14.89 |
| Ethylbenzene | Ih, I,N | LOAEL | 2.38 | 45.95 | 1.97 | 23.86 | 1.56 | 12.38 |
| Ih,C,N | LOAEL | 2.28 | 39.00 | 1.87 | 20.29 | 1.46 | 10.55 |
| Toluene | Ih,C,N | LOAEL | 2.14 | 31.31 | 1.73 | 16.22 | 1.32 | 8.40 |
| Xylenes | Ih,C,N | LOAEL | 2.54 | 59.27 | 2.04 | 26.69 | 1.55 | 12.01 |

1 Entries are route, length of exposure, data where route is oral (O), inhalation (Ih); length is acute (A), intermediate (I), chronic (C); data is quantal (Q), continuous (C), not applicable (N)

Supplemental Table S4: Sensitivity of the proposed method to model choice when comparing a log-logistic model[[1]](#footnote-1) to the Weibull Model

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Case | Weibull | Log-logistic | Weibull | Log-Logistic | Ratio LL/W[[2]](#footnote-2) |
| BMD | P(BMD) | MRL | P(MRL) | b | k | a | s | 2\*MRL | 10\*MRL | 2\*MRL | 10\*MRL | 2\*MRL | 10\*MRL |
| 1 | 0.1 | 0.01 | 10-6 | 1.05 x10-1 | 2.51 | -2.20 | 2.52 | 5.70 x10-6 | 3.25 x10-4 | 5.75 x10-6 | 3.33 x10-4 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 2.36 | -2.94 | 2.36 | 5.12 x10-6 | 2.26 x10-4 | 5.14 x10-6 | 2.29x10-4 | 1.00 | 1.01 |
| 0.1 | 0.03 | 1.05 x10-1 | 3.30 | -2.20 | 3.31 | 9.84 x10-6 | 1.98 x10-3 | 9.94 x10-6 | 2.05 x10-3 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 3.09 | -2.94 | 3.10 | 8.53 x10-6 | 1.24 x10-3 | 8.58 x10-6 | 1.26 x10-3 | 1.01 | 1.01 |
| 0.1 | 0.001 | 1.05 x10-1 | 1.67 | -2.20 | 1.68 | 3.19 x10-6 | 4.72 x10-5 | 3.21 x10-6 | 4.81 x10-5 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 1.57 | -2.94 | 1.57 | 2.97 x10-6 | 3.72 x10-5 | 2.98 x10-6 | 3.75 x10-5 | 1.00 | 1.01 |
| 0.1 | 0.003 | 1.05 x10-1 | 1.99 | -2.20 | 2.00 | 3.97 x10-6 | 9.79 x10-5 | 4.00 x10-6 | 1.00 x10-4 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 1.87 | -2.94 | 1.87 | 3.65 x10-6 | 7.36 x10-5 | 3.66 x10-6 | 7.44 x10-5 | 1.00 | 1.01 |
| 0.1 | 0.01 | 10-5 | 1.05 x10-1 | 2.01 | -2.20 | 2.02 | 4.03 x10-5 | 1.03 x10-3 | 4.06 x10-5 | 1.05 x10-3 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 1.86 | -2.94 | 1.86 | 3.62 x10-5 | 7.16x10-4 | 3.63 x10-5 | 7.25x10-4 | 1.00 | 1.01 |
| 0.1 | 0.03 | 1.05 x10-1 | 2.64 | -2.20 | 2.66 | 6.24 x10-5 | 4.37 x10-3 | 6.31 x10-5 | 4.52 x10-3 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 2.44 | -2.94 | 2.44 | 5.41 x10-5 | 2.73 x10-3 | 5.44 x10-5 | 2.77 x10-3 | 1.01 | 1.01 |
| 0.1 | 0.001 | 1.05 x10-1 | 1.34 | -2.20 | 1.35 | 2.53 x10-5 | 2.19x10-4 | 2.55 x10-5 | 2.23x10-4 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 1.24 | -2.94 | 1.24 | 2.36 x10-5 | 1.72x10-4 | 2.36 x10-5 | 1.74 x10-4 | 1.00 | 1.01 |
| 0.1 | 0.003 | 1.05 x10-1 | 1.59 | -2.20 | 1.60 | 3.02 x10-5 | 3.93 x10-4 | 3.04 x10-5 | 4.01 x10-4 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 1.47 | -2.94 | 1.47 | 2.77 x10-5 | 2.95 x10-4 | 2.78 x10-5 | 2.98 x10-4 | 1.00 | 1.01 |
| 0.1 | 0.01 | 10-4 | 1.05 x10-1 | 1.51 | -2.20 | 1.52 | 2.85 x10-4 | 3.24 x10-3 | 2.87 x10-4 | 3.32 x10-3 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 1.36 | -2.94 | 1.36 | 2.56 x10-4 | 2.26 x10-3 | 2.57 x10-4 | 2.29 x10-3 | 1.00 | 1.01 |
| 0.1 | 0.03 | 1.05 x10-1 | 1.98 | -2.20 | 2.00 | 3.96 x10-4 | 9.61 x10-3 | 4.00 x10-4 | 9.90 x10-3 | 1.01 | 1.02 |
| 0.05 | 5.13 x10-2 | 1.78 | -2.94 | 1.79 | 3.43 x10-4 | 6.00 x10-3 | 3.45 x10-4 | 6.09 x10-3 | 1.00 | 1.01 |
| 0.1 | 0.001 | 1.05 x10-1 | 1.01 | -2.20 | 1.02 | 2.01 x10-4 | 1.02 x10-3 | 2.02 x10-4 | 1.03 x10-3 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 0.90 | -2.94 | 0.91 | 1.87 x10-4 | 8.00 x10-4 | 1.88 x10-4 | 8.07 x10-4 | 1.00 | 1.01 |
| 0.1 | 0.003 | 1.05 x10-1 | 1.20 | -2.20 | 1.21 | 2.29 x10-4 | 1.58 x10-3 | 2.31 x10-4 | 1.61 x10-3 | 1.01 | 1.01 |
| 0.05 | 5.13 x10-2 | 1.07 | -2.94 | 1.08 | 2.11 x10-4 | 1.19 x10-3 | 2.11 x10-4 | 1.20 x10-3 | 1.00 | 1.01 |

1. For the log-logistic model, $R\_{D}=\frac{1}{1+e^{-a-s ln⁡(D)}}$ [↑](#footnote-ref-1)
2. Ratio of the Log-Logistic risk to the Weibull risk [↑](#footnote-ref-2)