

Appendix

Appendix. Methane diffusion coefficients based on bidisperse model and multiporous model

| Sample no. | Equilibrium pressure (MPa) | Bidisperse model | | | | Multiporous model | | | | | | |
|------------|----------------------------|------------------|-----------------------------|-----------------------------|--------|-------------------|-----------------------------|-------------|-----------------------------|-------------|-----------------------------|--------|
| | | β | D_{ae} (s ⁻¹) | D_{ie} (s ⁻¹) | R^2 | θ_a | D_{ae} (s ⁻¹) | \hat{c}_e | D_{ee} (s ⁻¹) | \hat{c}_i | D_{ie} (s ⁻¹) | R^2 |
| LHJ 4#-01 | 0.78 | 0.672 | 4.71E-04 | 2.85E-05 | 0.999 | 0.157 | 6.44E-03 | 0.383 | 2.18E-04 | 0.46 | 2.95E-05 | 0.9995 |
| | 1.67 | 0.606 | 4.82E-04 | 2.76E-05 | 0.9968 | 0.104 | 6.18E-03 | 0.256 | 1.96E-04 | 0.64 | 2.88E-05 | 0.9991 |
| | 3.05 | 0.713 | 3.65E-04 | 2.27E-05 | 0.9978 | 0.171 | 5.82E-03 | 0.365 | 1.52E-04 | 0.464 | 2.20E-05 | 0.9996 |
| | 4.75 | 0.733 | 3.59E-04 | 2.46E-05 | 0.9669 | 0.206 | 5.36E-03 | 0.341 | 1.69E-04 | 0.453 | 2.14E-05 | 0.9986 |
| | 6.29 | 0.708 | 3.26E-04 | 1.99E-05 | 0.9808 | 0.128 | 5.11E-03 | 0.291 | 1.43E-04 | 0.58 | 2.01E-05 | 0.9969 |
| | 7.77 | 0.631 | 2.55E-04 | 1.90E-05 | 0.953 | 0.107 | 4.73E-03 | 0.332 | 1.12E-04 | 0.562 | 1.84E-05 | 0.9891 |
| LHJ 4#-02 | 0.77 | 0.59 | 7.63E-06 | 3.70E-06 | 0.9803 | 0.227 | 1.95E-03 | 0.53 | 6.97E-05 | 0.243 | 9.11E-06 | 0.9997 |
| | 1.48 | 0.564 | 2.56E-06 | 2.44E-06 | 0.9962 | 0.164 | 1.20E-03 | 0.447 | 5.43E-05 | 0.389 | 7.51E-06 | 0.9987 |
| | 2.83 | 0.842 | 3.90E-06 | 1.96E-06 | 0.9757 | 0.244 | 9.51E-04 | 0.619 | 6.38E-05 | 0.137 | 8.53E-06 | 0.9997 |
| | 4.44 | 0.654 | 2.28E-06 | 1.71E-06 | 0.939 | 0.104 | 1.30E-03 | 0.325 | 3.49E-05 | 0.571 | 5.22E-06 | 0.99 |
| | 6.18 | 0.594 | 2.20E-06 | 1.65E-06 | 0.9353 | 0.135 | 6.76E-04 | 0.134 | 4.25E-05 | 0.731 | 4.93E-06 | 0.9916 |
| | 7.41 | 0.576 | 1.82E-06 | 1.10E-06 | 0.9954 | 0.118 | 5.97E-04 | 0.414 | 2.19E-05 | 0.467 | 2.94E-06 | 0.9723 |
| LHJ 4#-03 | 1.07 | 0.459 | 9.47E-07 | 6.58E-07 | 0.459 | 0.21 | 4.47E-04 | 0.27 | 3.23E-05 | 0.52 | 6.47E-06 | 0.9997 |
| | 1.94 | 0.568 | 8.75E-07 | 6.01E-07 | 0.568 | 0.249 | 3.69E-04 | 0.27 | 1.21E-05 | 0.481 | 3.18E-06 | 0.9984 |
| | 3.37 | 0.547 | 5.59E-07 | 4.22E-07 | 0.547 | 0.136 | 2.10E-04 | 0.45 | 1.78E-05 | 0.414 | 4.05E-06 | 0.9929 |
| | 4.76 | 0.753 | 4.22E-07 | 3.18E-07 | 0.753 | 0.145 | 3.53E-04 | 0.285 | 1.04E-05 | 0.57 | 2.47E-06 | 0.9941 |
| | 6.46 | 0.49 | 6.80E-07 | 8.95E-08 | 0.49 | 0.306 | 2.95E-04 | 0.234 | 1.40E-05 | 0.461 | 2.04E-06 | 0.9912 |

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|----------|------|-------|----------|----------|--------|-------|----------|-------|----------|-------|----------|--------|
| | 8.65 | 0.69 | 3.10E-07 | 1.40E-07 | 0.69 | 0.136 | 1.01E-04 | 0.31 | 1.00E-05 | 0.554 | 9.75E-07 | 0.9901 |
| | 0.74 | 0.457 | 5.36E-04 | 2.05E-05 | 0.983 | 0.71 | 4.85E-03 | 0.151 | 1.43E-04 | 0.139 | 1.22E-05 | 0.9997 |
| | 1.99 | 0.636 | 5.16E-04 | 1.90E-05 | 0.9379 | 0.635 | 3.90E-03 | 0.141 | 1.29E-04 | 0.225 | 1.25E-05 | 0.9995 |
| FL 1#-01 | 3.42 | 0.754 | 4.17E-04 | 1.48E-05 | 0.9901 | 0.706 | 3.72E-03 | 0.254 | 1.14E-04 | 0.04 | 1.14E-05 | 0.9922 |
| | 5.54 | 0.562 | 3.61E-04 | 1.51E-05 | 0.9921 | 0.503 | 3.32E-03 | 0.292 | 9.78E-05 | 0.204 | 1.11E-05 | 0.9987 |
| | 7.42 | 0.458 | 2.81E-04 | 1.06E-05 | 0.9811 | 0.512 | 2.91E-03 | 0.143 | 9.18E-05 | 0.345 | 1.07E-05 | 0.9987 |
| | 0.61 | 0.541 | 2.12E-04 | 1.10E-05 | 0.9908 | 0.612 | 3.74E-03 | 0.127 | 9.16E-05 | 0.261 | 1.02E-05 | 0.9908 |
| | 1.34 | 0.516 | 1.40E-04 | 1.22E-05 | 0.96 | 0.543 | 3.12E-03 | 0.323 | 8.35E-05 | 0.134 | 1.00E-05 | 0.9994 |
| FL 1#-02 | 2.52 | 0.436 | 1.64E-04 | 8.11E-06 | 0.9283 | 0.482 | 2.91E-03 | 0.129 | 8.10E-05 | 0.389 | 9.15E-06 | 0.9987 |
| | 3.77 | 0.451 | 1.47E-04 | 6.24E-06 | 0.9783 | 0.47 | 1.83E-03 | 0.316 | 7.54E-05 | 0.214 | 8.77E-06 | 0.9964 |
| | 5.68 | 0.451 | 1.03E-04 | 3.92E-06 | 0.9595 | 0.633 | 1.71E-03 | 0.131 | 6.59E-05 | 0.236 | 7.42E-06 | 0.9959 |
| | 7.53 | 0.451 | 1.05E-04 | 2.39E-06 | 0.9332 | 0.645 | 1.30E-03 | 0.136 | 4.11E-05 | 0.219 | 6.51E-06 | 0.9959 |
| | 0.51 | 0.554 | 9.87E-05 | 8.10E-06 | 0.9706 | 0.314 | 2.63E-03 | 0.309 | 7.44E-05 | 0.377 | 1.00E-05 | 0.999 |
| | 1.25 | 0.43 | 8.51E-05 | 9.11E-06 | 0.9792 | 0.625 | 2.47E-03 | 0.203 | 5.73E-05 | 0.172 | 7.21E-06 | 0.9988 |
| FL 1#-03 | 2.98 | 0.43 | 5.11E-05 | 4.56E-06 | 0.9933 | 0.481 | 1.67E-03 | 0.256 | 6.72E-05 | 0.263 | 8.63E-06 | 0.9956 |
| | 4.16 | 0.638 | 6.49E-05 | 3.80E-06 | 0.9644 | 0.671 | 1.47E-03 | 0.135 | 4.26E-05 | 0.194 | 5.73E-06 | 0.9972 |
| | 5.46 | 0.545 | 3.66E-05 | 1.26E-06 | 0.9117 | 0.591 | 1.14E-03 | 0.309 | 4.75E-05 | 0.101 | 4.38E-06 | 0.9893 |
| | 7.54 | 0.649 | 2.18E-05 | 1.22E-06 | 0.9722 | 0.587 | 9.57E-04 | 0.176 | 1.31E-05 | 0.236 | 2.44E-06 | 0.939 |
| | 0.54 | 0.499 | 4.75E-04 | 2.76E-05 | 0.9855 | 0.114 | 4.10E-03 | 0.282 | 1.62E-04 | 0.604 | 1.95E-05 | 0.9076 |
| | 1.46 | 0.365 | 4.54E-04 | 2.92E-05 | 0.9875 | 0.169 | 4.03E-03 | 0.527 | 1.22E-04 | 0.303 | 1.68E-05 | 0.9994 |
| HDG 6# | 3.07 | 0.512 | 4.26E-04 | 2.56E-05 | 0.9801 | 0.185 | 3.83E-03 | 0.39 | 9.66E-05 | 0.424 | 1.40E-05 | 0.9987 |
| | 5.09 | 0.412 | 3.42E-04 | 2.61E-05 | 0.9736 | 0.121 | 3.26E-03 | 0.376 | 9.19E-05 | 0.503 | 1.15E-05 | 0.9964 |
| | 6.69 | 0.546 | 3.14E-04 | 1.81E-05 | 0.9625 | 0.212 | 2.65E-03 | 0.48 | 8.51E-05 | 0.307 | 9.55E-06 | 0.9959 |
| | 8.51 | 0.615 | 3.01E-04 | 1.62E-05 | 0.9962 | 0.203 | 2.18E-03 | 0.366 | 7.91E-05 | 0.431 | 7.29E-06 | 0.9959 |

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| BD 2#-01 | 0.9 | 0.853 | 3.05E-04 | 1.72E-05 | 0.9897 | 0.519 | 3.66E-03 | 0.265 | 1.03E-04 | 0.216 | 1.40E-05 | 0.9996 |
| | 1.76 | 0.745 | 2.52E-04 | 2.03E-05 | 0.9944 | 0.481 | 3.53E-03 | 0.349 | 9.20E-05 | 0.169 | 1.22E-05 | 0.9993 |
| | 3.15 | 0.812 | 1.28E-04 | 1.71E-05 | 0.9856 | 0.426 | 3.09E-03 | 0.401 | 8.73E-05 | 0.172 | 1.31E-05 | 0.9996 |
| | 5.01 | 0.69 | 1.03E-04 | 1.52E-05 | 0.995 | 0.436 | 2.32E-03 | 0.304 | 7.34E-05 | 0.26 | 1.06E-05 | 0.9984 |
| | 6.49 | 0.915 | 7.45E-05 | 1.20E-05 | 0.9946 | 0.463 | 1.98E-03 | 0.309 | 7.36E-05 | 0.229 | 8.21E-06 | 0.9977 |
| | 8.06 | 0.756 | 9.09E-05 | 1.20E-05 | 0.9779 | 0.393 | 1.65E-03 | 0.327 | 6.22E-05 | 0.28 | 9.21E-06 | 0.9973 |
| BD 2#-02 | 0.83 | 0.604 | 4.24E-04 | 4.26E-05 | 0.9997 | 0.403 | 5.14E-03 | 0.217 | 1.93E-04 | 0.38 | 3.21E-05 | 0.9902 |
| | 1.6 | 0.73 | 4.01E-04 | 4.01E-05 | 0.9914 | 0.413 | 4.64E-03 | 0.206 | 1.65E-04 | 0.382 | 2.42E-05 | 0.9867 |
| | 3.22 | 0.642 | 3.50E-04 | 3.25E-05 | 0.9989 | 0.483 | 4.10E-03 | 0.312 | 1.55E-04 | 0.205 | 2.85E-05 | 0.9995 |
| | 5.19 | 0.503 | 3.33E-04 | 3.85E-05 | 0.9925 | 0.386 | 3.57E-03 | 0.401 | 1.62E-04 | 0.212 | 2.01E-05 | 0.9996 |
| | 6.63 | 0.731 | 2.85E-04 | 2.85E-05 | 0.9987 | 0.501 | 2.59E-03 | 0.22 | 1.23E-04 | 0.279 | 1.82E-05 | 0.9894 |
| | 7.81 | 0.643 | 1.95E-04 | 2.66E-05 | 0.9996 | 0.435 | 1.82E-03 | 0.137 | 1.02E-04 | 0.428 | 1.62E-05 | 0.9839 |
| YT 5# | 0.76 | 0.545 | 2.13E-04 | 7.47E-06 | 0.9829 | 0.607 | 1.63E-03 | 0.126 | 7.89E-05 | 0.267 | 8.25E-06 | 0.9993 |
| | 1.98 | 0.654 | 2.17E-04 | 6.92E-06 | 0.9859 | 0.572 | 1.45E-03 | 0.173 | 7.28E-05 | 0.255 | 7.56E-06 | 0.9994 |
| | 3.5 | 0.458 | 9.84E-05 | 3.26E-06 | 0.965 | 0.491 | 1.63E-03 | 0.165 | 7.27E-05 | 0.343 | 7.22E-06 | 0.9979 |
| | 4.92 | 0.566 | 5.25E-05 | 3.58E-06 | 0.9342 | 0.427 | 1.07E-03 | 0.13 | 5.61E-05 | 0.443 | 6.59E-06 | 0.9931 |
| | 7.05 | 0.525 | 4.02E-05 | 2.36E-06 | 0.9445 | 0.548 | 1.30E-03 | 0.156 | 5.26E-05 | 0.295 | 5.52E-06 | 0.9958 |
| | 9.82 | 0.424 | 1.76E-05 | 1.76E-06 | 0.9856 | 0.457 | 9.23E-04 | 0.169 | 3.50E-05 | 0.375 | 4.59E-06 | 0.9872 |
| HJG 5# | 0.77 | 0.577 | 7.69E-05 | 7.24E-06 | 0.9955 | 0.381 | 1.34E-03 | 0.142 | 6.11E-05 | 0.477 | 1.01E-05 | 0.9982 |
| | 1.85 | 0.33 | 6.14E-05 | 3.43E-06 | 0.9962 | 0.363 | 1.05E-03 | 0.182 | 5.81E-05 | 0.455 | 7.40E-06 | 0.9982 |
| | 3.38 | 0.51 | 5.11E-05 | 2.71E-06 | 0.9746 | 0.305 | 1.09E-03 | 0.156 | 5.14E-05 | 0.539 | 6.97E-06 | 0.9995 |
| | 4.96 | 0.302 | 3.92E-05 | 1.33E-06 | 0.9772 | 0.209 | 9.20E-04 | 0.149 | 4.82E-05 | 0.642 | 4.83E-06 | 0.9804 |
| | 6.49 | 0.686 | 3.21E-05 | 1.35E-06 | 0.9559 | 0.417 | 8.75E-04 | 0.142 | 4.31E-05 | 0.441 | 4.64E-06 | 0.9851 |
| WJY 8# | 1.01 | 0.625 | 5.32E-05 | 8.48E-06 | 0.995 | 0.561 | 1.96E-03 | 0.131 | 6.25E-05 | 0.308 | 9.13E-06 | 0.9984 |

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| | 2 | 0.459 | 3.11E-05 | 4.64E-06 | 0.9939 | 0.519 | 1.10E-03 | 0.164 | 7.26E-05 | 0.317 | 7.81E-06 | 0.9982 |
| | 3.57 | 0.564 | 2.98E-05 | 2.76E-06 | 0.9961 | 0.514 | 9.41E-04 | 0.192 | 5.16E-05 | 0.294 | 6.53E-06 | 0.9987 |
| | 5.14 | 0.586 | 1.94E-05 | 2.35E-06 | 0.9731 | 0.602 | 9.00E-04 | 0.131 | 3.95E-05 | 0.267 | 4.38E-06 | 0.9986 |
| | 6.43 | 0.459 | 9.65E-06 | 1.69E-06 | 0.9651 | 0.452 | 6.85E-04 | 0.12 | 3.48E-05 | 0.428 | 3.78E-06 | 0.9969 |
| | 7.93 | 0.396 | 8.19E-06 | 1.07E-06 | 0.9356 | 0.505 | 7.19E-04 | 0.101 | 2.62E-05 | 0.394 | 4.59E-06 | 0.9918 |
| | 0.89 | 0.566 | 6.15E-05 | 6.29E-06 | 0.9947 | 0.272 | 1.15E-03 | 0.236 | 5.18E-05 | 0.492 | 7.65E-06 | 0.9985 |
| | 1.92 | 0.582 | 5.83E-05 | 9.23E-06 | 0.9795 | 0.26 | 7.98E-04 | 0.253 | 3.50E-05 | 0.486 | 6.63E-06 | 0.9983 |
| DQ 4# | 3.3 | 0.457 | 4.10E-05 | 7.19E-06 | 0.9837 | 0.436 | 8.16E-04 | 0.321 | 4.14E-05 | 0.243 | 4.12E-06 | 0.9978 |
| | 4.73 | 0.495 | 2.44E-05 | 4.32E-06 | 0.954 | 0.248 | 6.43E-04 | 0.168 | 3.18E-05 | 0.584 | 3.96E-06 | 0.9935 |
| | 7.28 | 0.524 | 3.23E-05 | 5.19E-06 | 0.9216 | 0.424 | 2.12E-04 | 0.2 | 2.31E-05 | 0.377 | 3.76E-06 | 0.9873 |
| | 9.49 | 0.496 | 1.18E-05 | 1.22E-06 | 0.9722 | 0.291 | 3.93E-04 | 0.11 | 1.77E-05 | 0.599 | 2.98E-06 | 0.9987 |
| | 0.46 | 0.517 | 5.12E-04 | 2.58E-05 | 0.9377 | 0.152 | 3.15E-03 | 0.379 | 1.37E-04 | 0.469 | 1.15E-05 | 0.9997 |
| | 1.27 | 0.491 | 4.36E-04 | 2.32E-05 | 0.9567 | 0.196 | 3.02E-03 | 0.359 | 1.16E-04 | 0.445 | 1.11E-05 | 0.9998 |
| SY 15#- | 2.4 | 0.401 | 3.56E-04 | 2.42E-05 | 0.9663 | 0.144 | 2.92E-03 | 0.475 | 8.91E-05 | 0.381 | 1.07E-05 | 0.9995 |
| 01 | 3.75 | 0.296 | 3.47E-04 | 2.11E-05 | 0.9505 | 0.269 | 2.27E-03 | 0.492 | 7.52E-05 | 0.239 | 1.02E-05 | 0.9982 |
| | 5.54 | 0.095 | 2.58E-04 | 1.73E-05 | 0.9766 | 0.159 | 2.11E-03 | 0.686 | 6.71E-05 | 0.155 | 9.54E-06 | 0.9831 |
| | 7.08 | 0.88 | 2.63E-04 | 1.71E-05 | 0.9766 | 0.241 | 1.98E-03 | 0.583 | 5.67E-05 | 0.175 | 8.61E-06 | 0.9697 |
| | 0.59 | 0.456 | 4.16E-04 | 5.41E-05 | 0.9989 | 0.31 | 4.59E-03 | 0.437 | 2.23E-04 | 0.253 | 3.15E-05 | 0.9783 |
| | 1.35 | 0.537 | 4.22E-04 | 5.32E-05 | 0.9849 | 0.156 | 3.85E-03 | 0.564 | 1.54E-04 | 0.279 | 2.85E-05 | 0.9983 |
| SY 15#- | 2.61 | 0.489 | 3.04E-04 | 4.29E-05 | 0.9929 | 0.169 | 3.75E-03 | 0.412 | 2.00E-04 | 0.419 | 2.54E-05 | 0.9914 |
| 02 | 3.62 | 0.485 | 3.25E-04 | 4.53E-05 | 0.9829 | 0.228 | 3.41E-03 | 0.435 | 1.85E-04 | 0.337 | 2.21E-05 | 0.9989 |
| | 5.7 | 0.525 | 2.87E-04 | 3.95E-05 | 0.9997 | 0.128 | 2.91E-03 | 0.556 | 1.46E-04 | 0.315 | 2.05E-05 | 0.9902 |
| | 7.21 | 0.515 | 2.61E-04 | 3.31E-05 | 0.9894 | 0.156 | 2.41E-03 | 0.442 | 1.25E-04 | 0.402 | 1.86E-05 | 0.9997 |
| XY 15# | 1.48 | 0.541 | 3.54E-04 | 1.31E-05 | 0.9993 | 0.412 | 5.27E-03 | 0.305 | 2.01E-04 | 0.283 | 1.53E-05 | 0.9996 |

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|---------------|------|-------|----------|----------|--------|-------|----------|-------|----------|-------|----------|--------|
| | 2.07 | 0.516 | 3.07E-04 | 1.35E-05 | 0.995 | 0.312 | 4.75E-03 | 0.163 | 1.57E-04 | 0.525 | 1.24E-05 | 0.9914 |
| | 3.09 | 0.436 | 1.35E-04 | 9.98E-06 | 0.9965 | 0.46 | 3.99E-03 | 0.154 | 1.47E-04 | 0.386 | 1.20E-05 | 0.9989 |
| | 4.15 | 0.614 | 9.87E-05 | 1.22E-05 | 0.9729 | 0.529 | 3.51E-03 | 0.224 | 1.13E-04 | 0.247 | 1.02E-05 | 0.9902 |
| | 5.54 | 0.524 | 7.72E-05 | 7.39E-06 | 0.9525 | 0.564 | 3.25E-03 | 0.136 | 8.32E-05 | 0.3 | 1.00E-05 | 0.9987 |
| DY 6# | 0.49 | 0.554 | 5.09E-04 | 2.83E-05 | 0.9479 | 0.202 | 5.52E-03 | 0.309 | 1.93E-04 | 0.489 | 2.11E-05 | 0.9971 |
| | 1.15 | 0.355 | 5.18E-04 | 2.93E-05 | 0.9389 | 0.186 | 4.89E-03 | 0.381 | 1.78E-04 | 0.433 | 1.88E-05 | 0.9915 |
| | 2.33 | 0.418 | 4.54E-04 | 2.64E-05 | 0.9602 | 0.175 | 4.54E-03 | 0.331 | 1.26E-04 | 0.494 | 1.50E-05 | 0.9992 |
| | 3.58 | 0.511 | 3.60E-04 | 2.31E-05 | 0.9557 | 0.134 | 4.03E-03 | 0.231 | 1.36E-04 | 0.634 | 1.70E-05 | 0.9871 |
| | 5.54 | 0.457 | 4.13E-04 | 1.99E-05 | 0.9301 | 0.152 | 3.83E-03 | 0.264 | 1.01E-04 | 0.584 | 1.09E-05 | 0.9833 |
| | 7.17 | 0.392 | 3.25E-04 | 2.13E-05 | 0.9364 | 0.142 | 3.42E-03 | 0.303 | 9.31E-05 | 0.555 | 9.21E-06 | 0.9983 |
| GZ 15#- 01 | 1.12 | 0.557 | 5.70E-04 | 1.96E-05 | 0.9905 | 0.403 | 6.12E-03 | 0.365 | 2.19E-04 | 0.231 | 2.14E-05 | 0.9996 |
| | 1.69 | 0.395 | 5.03E-04 | 1.52E-05 | 0.9582 | 0.427 | 5.92E-03 | 0.345 | 1.62E-04 | 0.228 | 1.91E-05 | 0.9948 |
| | 2.75 | 0.35 | 4.54E-04 | 1.68E-05 | 0.9844 | 0.508 | 5.24E-03 | 0.378 | 1.40E-04 | 0.114 | 1.38E-05 | 0.9884 |
| | 3.78 | 0.454 | 3.23E-04 | 1.05E-05 | 0.9571 | 0.386 | 4.82E-03 | 0.31 | 9.62E-05 | 0.304 | 1.56E-05 | 0.9661 |
| | 5.45 | 0.42 | 2.97E-04 | 9.56E-06 | 0.9531 | 0.396 | 4.32E-03 | 0.326 | 8.49E-05 | 0.278 | 1.23E-05 | 0.9944 |
| | 7.5 | 0.532 | 1.88E-04 | 7.64E-06 | 0.9853 | 0.345 | 3.75E-03 | 0.379 | 7.14E-05 | 0.276 | 1.02E-05 | 0.9984 |
| GZ 15#- 02 | 0.64 | 0.466 | 3.07E-04 | 1.45E-05 | 0.9769 | 0.127 | 3.25E-03 | 0.317 | 1.11E-04 | 0.555 | 1.21E-05 | 0.9998 |
| | 1.35 | 0.471 | 1.97E-04 | 1.73E-05 | 0.9629 | 0.159 | 2.94E-03 | 0.459 | 8.18E-05 | 0.383 | 1.06E-05 | 0.9997 |
| | 2.47 | 0.414 | 2.22E-04 | 1.03E-05 | 0.9302 | 0.425 | 2.72E-03 | 0.416 | 7.91E-05 | 0.16 | 9.59E-06 | 0.9889 |
| | 3.64 | 0.505 | 1.21E-04 | 8.73E-06 | 0.9304 | 0.126 | 2.52E-03 | 0.429 | 6.49E-05 | 0.445 | 7.52E-06 | 0.9922 |
| | 5.42 | 0.621 | 1.30E-04 | 4.99E-06 | 0.9457 | 0.143 | 2.11E-03 | 0.474 | 6.12E-05 | 0.383 | 6.19E-06 | 0.998 |
| | 7.23 | 0.221 | 8.47E-05 | 3.20E-06 | 0.9646 | 0.105 | 2.00E-03 | 0.396 | 5.51E-05 | 0.499 | 5.19E-06 | 0.9968 |
| GZ 15#- 03 | 0.5 | 0.492 | 9.52E-05 | 1.03E-05 | 0.9831 | 0.255 | 2.34E-03 | 0.521 | 5.68E-05 | 0.225 | 6.10E-06 | 0.9989 |
| | 1.28 | 0.402 | 1.69E-04 | 9.75E-06 | 0.9948 | 0.237 | 1.94E-03 | 0.32 | 5.39E-05 | 0.443 | 5.31E-06 | 0.9849 |

| | | | | | | | | | | | | |
|---------|------|-------|----------|----------|--------|-------|----------|-------|----------|-------|----------|--------|
| | 2.4 | 0.445 | 6.30E-05 | 5.67E-06 | 0.955 | 0.147 | 1.83E-03 | 0.542 | 4.38E-05 | 0.311 | 7.43E-06 | 0.9929 |
| | 3.74 | 0.609 | 7.48E-05 | 3.16E-06 | 0.9506 | 0.222 | 1.59E-03 | 0.422 | 4.23E-05 | 0.356 | 4.54E-06 | 0.9829 |
| | 5.5 | 0.418 | 3.67E-05 | 2.75E-06 | 0.9014 | 0.261 | 1.35E-03 | 0.416 | 2.36E-05 | 0.323 | 3.19E-06 | 0.9783 |
| | 7.71 | 0.318 | 3.10E-05 | 1.60E-06 | 0.9006 | 0.113 | 1.35E-03 | 0.387 | 2.14E-05 | 0.501 | 2.21E-06 | 0.9983 |
| | 0.53 | 0.541 | 5.06E-06 | 4.91E-06 | 0.541 | 0.209 | 1.74E-03 | 0.403 | 5.94E-05 | 0.388 | 1.05E-05 | 0.9996 |
| | 1.4 | 0.452 | 4.14E-06 | 2.63E-06 | 0.452 | 0.243 | 8.61E-04 | 0.101 | 5.33E-05 | 0.655 | 9.78E-06 | 0.9997 |
| GZ 15#- | 2.6 | 0.644 | 3.04E-06 | 1.97E-06 | 0.644 | 0.201 | 1.26E-03 | 0.415 | 4.29E-05 | 0.383 | 5.12E-06 | 0.9995 |
| 04 | 3.79 | 0.614 | 3.68E-06 | 1.25E-06 | 0.614 | 0.171 | 5.99E-04 | 0.395 | 2.19E-05 | 0.435 | 7.06E-06 | 0.9925 |
| | 5.09 | 0.582 | 1.94E-06 | 9.26E-07 | 0.582 | 0.114 | 7.43E-04 | 0.246 | 3.22E-05 | 0.64 | 5.27E-06 | 0.9894 |
| | 6.17 | 0.55 | 1.54E-06 | 8.95E-07 | 0.55 | 0.101 | 3.43E-04 | 0.455 | 1.35E-05 | 0.444 | 3.22E-06 | 0.9839 |
| | 0.56 | 0.349 | 3.32E-07 | 2.41E-07 | 0.349 | 0.239 | 8.60E-04 | 0.315 | 3.43E-05 | 0.446 | 5.10E-06 | 0.9998 |
| | 1.49 | 0.54 | 2.92E-07 | 2.14E-07 | 0.54 | 0.142 | 4.14E-04 | 0.494 | 2.59E-05 | 0.364 | 3.15E-06 | 0.9997 |
| GZ 15#- | 2.8 | 0.325 | 1.67E-07 | 1.46E-07 | 0.325 | 0.134 | 5.35E-04 | 0.312 | 1.28E-05 | 0.554 | 4.31E-06 | 0.9889 |
| 05 | 4.32 | 0.459 | 1.43E-07 | 9.85E-08 | 0.459 | 0.245 | 3.56E-04 | 0.383 | 1.57E-05 | 0.372 | 1.72E-06 | 0.9922 |
| | 7.14 | 0.426 | 1.24E-07 | 8.11E-08 | 0.426 | 0.126 | 1.24E-04 | 0.29 | 1.06E-05 | 0.585 | 2.00E-06 | 0.998 |

Notes: Dae- Macropore effective coefficient; Dee- Mesopore effective coefficient; Die- Micropore effective coefficient; β , ∂a , ∂e , ∂i is diffusion coefficient ratio; LHJ 4#-02: moisture content is 3.3%; LHJ 4#-03: moisture content is 5.9%; FL 1#-02: particle size is 6-10 mesh; FL 1#-03: particle size is 2-3 mesh; BD 2#-02: Temperature is 40°C; SY 15#-02: Temperature is 40°C; GZ 15#-02: particle size is 6-10 mesh; GZ 15#-03: particle size is 2-3 mesh; GZ 15#-04: moisture content is 2.3%; GZ 15#-05: moisture content is 4.1%.