Supplementary Material for

**High-Pressure CO2-CH4 Separation through Composite Amine Mixed Matrix Membranes: Synthesis, Characterization and Performance Prediction**

This file includes raw data used for making figures (Figure 8a, 8b, 9a and 9b).

**Table 1**: The test results of gas separation through Composite Amine Mixed Matrix Membranes, which were used for plotting the (Figures 8a, 8b, 9a and 9b)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Membrane ID** | **CO2 Permeance (GPU)** | | | | | **CH4 Permeance (GPU)** | | | | | **CO2/CH4 Selectivity** | | | | |
| **Pressure (bar)** | | | | | **Pressure (bar)** | | | | | **Pressure (bar)** | | | | |
| **10** | **15** | **20** | **25** | **30** | **10** | **15** | **20** | **25** | **30** | **10** | **15** | **20** | **25** | **30** |
| **CM** | 180.5 | 161.83 | 143.66 | 137.358 | 142.21 | 36.57 | 26.82 | 20.58 | 17.06 | 17.45 | 4.94 | 6.03 | 6.98 | 8.05 | 8.15 |
| **CM-C10** | 343.37 | 323.66 | 281.58 | 261.94 | 263.66 | 40.22 | 29.33 | 23.23 | 18.65 | 18.03 | 8.54 | 11.04 | 12.12 | 14.05 | 14.62 |
| **CM-C10D5** | 375.45 | 354.20 | 324.41 | 270.76 | 268.18 | 40.12 | 29.99 | 24.11 | 19.09 | 18.19 | 9.36 | 11.81 | 13.46 | 14.18 | 14.74 |
| **CM-C10D10** | 411.67 | 373.95 | 351.98 | 285.87 | 289.70 | 41.53 | 31.08 | 25.05 | 19.49 | 18.63 | 9.91 | 12.03 | 14.05 | 14.67 | 15.55 |
| **CM-C10D15** | 469.31 | 411.67 | 380.52 | 297.97 | 300.84 | 42.92 | 32.70 | 26.27 | 19.90 | 18.76 | 10.93 | 12.59 | 14.49 | 14.97 | 16.04 |