**Figure 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Temp.  (ºC) | Feed Pressure  (bar(a) | **P CO2 (Barrer)** | | | a **CO2/N2** | | | a **CO2/CH4** | | | a **CO2/H2** | | |
| Extruded | Solvent casted | Annealed extruded | Extruded | Solvent casted | Annealed extruded | Extruded | Solvent casted | Annealed extruded | Extruded | Solvent casted | Annealed extruded |
| 35 | 1 | 167.1 | 296.4 |  | 40.5 | 41.9 |  | 14.0 | 15.4 |  | 6.8 | 8.6 |  |
| 3 | 153.0 | 303.0 | 307.6 | 44.9 | 46.5 | 46.3 | 14.5 | 14.1 | 14.1 | 6.3 | 9.4 | 9.0 |
| 5 | 154.3 | 310.5 | 312.5 | 46.3 | 47.9 | 46.8 | 14.9 | 14.5 | 14.4 | 6.6 | 9.6 | 9.2 |
| 7 | 160.4 | 318.4 | 318.9 | 48.6 | 51.7 | 48.6 | 15.6 | 14.8 | 14.9 | 6.9 | 9.9 | 9.5 |
| 25 | 1 | 108.0 | n.d |  | 48.5 | n.d |  | 15.2 | n.d |  | 6.2 | n.d |  |
| 3 | 99.5 | 236.3 |  | 55.1 | 60.5 |  | 15.5 | 16.0 |  | 5.9 | 10.3 |  |
| 5 | 101.9 | 239.0 |  | 57.7 | 61.4 |  | 16.6 | 16.4 |  | 6.2 | 10.3 |  |
| 7 | 105.0 | 255.2 |  | 58.7 | 64.6 |  | 17.0 | 17.4 |  | 6.4 | 11.3 |  |

**Figure 6**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Condensability (K)** | **Critical volume (cm3/mole)** | **P extruded film/P solvent cast film** | |
| **25 ºC** | **35 ºC** |
| H2 | 33.24 | 65.1 | 0.73 | 0.72 |
| N2 | 126.2 | 89.8 | 0.52 | 0.46 |
| CO2 | 304.2 | 93.9 | 0.50 | 0.42 |
| CH4 | 191.5 | 99.2 | 0.48 | 0.43 |