Table S1: Experimental parameters for precursor polymers (suffix –P):

a) propyl-containing polymers (Series 1), b) butyl-containing polymers (Series 2)

a)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Series 1** | | | | | | | |
| **Sample** | **N*Repeat units*** | **n*Propyl***  (mmol) | ***mPropyl***  (mg) | **n*Diamine***  (mmol) | **m*Diamine***  (mg) | **n*Catalyst***  (mmol) | **mCatalyst**  (mg) |
| P:D = 10:0-P | 10 | 1.35 | 500.0 | 0 | 0 | 0.14 | 98.4 |
| P:D = 9:1-P | 10 | 1.21 | 446.5 | 0.14 | 65.8 | 0.14 | 98.4 |
| P:D = 5:5-P | 10 | 0.68 | 250.9 | 0.68 | 319.6 | 0.14 | 98.4 |
| P:D = 1:9-P | 10 | 0.14 | 51.7 | 1.21 | 568.7 | 0.14 | 98.4 |

b)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Series 2** | | | | | | | |
| **Sample** | **N*Repeat units*** | **n*Butyl***  (mmol) | ***mButyl***  (mg) | **n*Diamine***  (mmol) | **m*Diamine***  (mg) | **n*Catalyst***  (mmol) | **mCatalyst**  (mg) |
| B:D = 10:0-P | 10 | 1.35 | 517.1 | 0 | 0 | 0.14 | 98.4 |
| B:D =9:1-P | 10 | 1.21 | 463.4 | 0.14 | 65.8 | 0.14 | 98.4 |
| B:D = 5:5-P | 10 | 0.68 | 260.4 | 0.68 | 319.6 | 0.14 | 98.4 |
| B:D = 1:9-P | 10 | 0.14 | 53.6 | 1.21 | 568.7 | 0.14 | 98.4 |