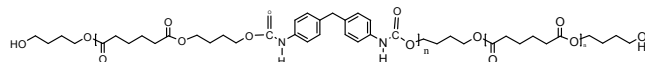


Sample Name:

Poly urethane based on Adipic acid, Butane diol and 4,4'-Methylenebis(phenyl isocyanate) MDI-based polyurethanes

Sample #: **P19342-PU**

Structure:



Composition:

| M _w x 10 ³ | M _w /M _n (PDI) | Composition Adipic acid: Butanediol:MDI | T _g (°C) |
|----------------------------------|--------------------------------------|---|---------------------|
| 12.5 | 1.7 | 1:1:1 | -15.1 |

Mn of Oligomers : Trimer of Adipic acid and butandiol: 3000

Synthesis Procedure:

Polyurethane is prepared in two-step procedure A: oligomerization of Adipic acid with Butane diol and then B reaction with MDI.

Characterization:

An aliquot of the copolymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The chemical composition was verified by ¹H-NMR spectroscopy, which is run in deuterated chloroform at 500MHz. The glass-transition temperature was measured by DSC.

Solubility:

| Chloroform | THF | DMF | DMSO |
|------------|-----|-----|------|
| (Y) | (y) | (Y) | (Y) |

Figure: ¹H NMR spectrum

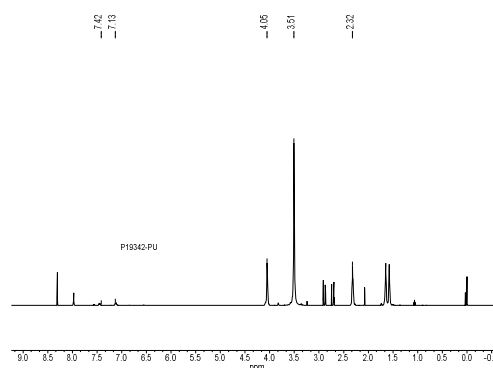
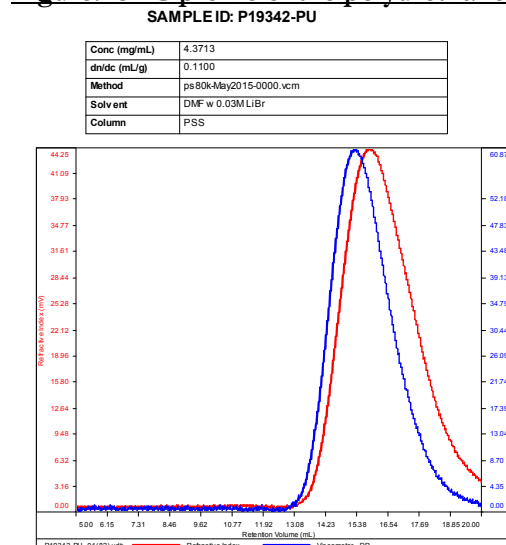


Figure: SEC profile of the polyurethane



| Sample | M _n | M _w | M _p | M _w /M _n | IV |
|----------------------|----------------|----------------|----------------|--------------------------------|--------|
| P19342-PU_01(82).vdt | 7,240 | 12,379 | 9,685 | 1.710 | 0.4114 |

DSC Thermogram:

