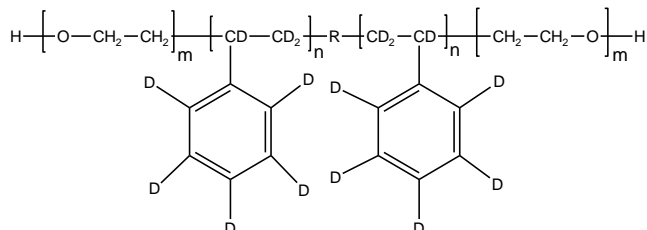


Sample Name:

**Poly(ethylene oxide-b-deuterated polystyrene -
b-ethylene oxide)**

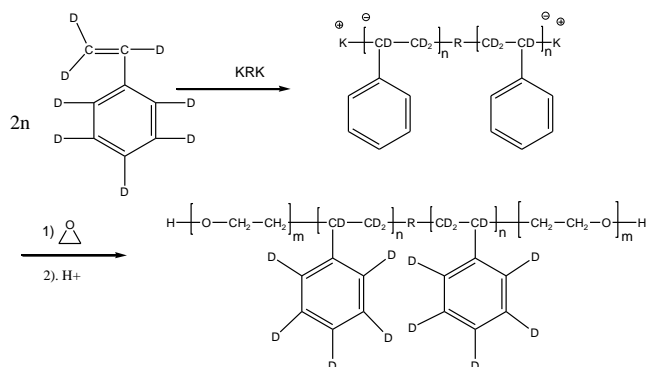
Sample #: P9064-EOdPSEO

Structure:**Composition:**

| $M_n \times 10^3$ | PDI |
|-------------------|------|
| 3.2-b-17.1-b-3.2 | 1.15 |

Synthesis Procedure:

Poly(ethylene oxide-b-deuterated poly styrene (d8) -b-ethylene oxide) is prepared by living anionic polymerization with sequence addition of deuterated styrene (d8) followed by ethylene oxide. The scheme of the reaction is illustrated below:

**Characterization:**

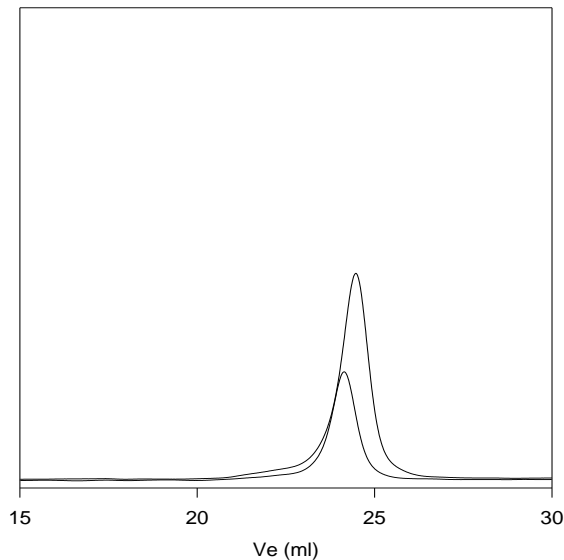
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

Solubility:

The polymer is soluble in THF, CHCl_3 and toluene.

SEC of Sample:

P9064-EOdPSEO



Size exclusion chromatography of poly(ethylene oxide-b-styrene-b-ethylene oxide)

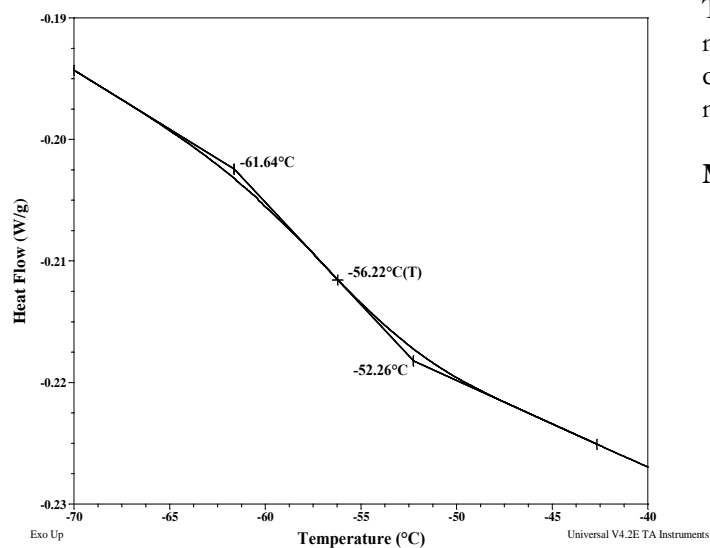
— Deuterated (d8) Poly(styrene), $M_n=17100$, $M_w=20500$, $PI=1.2$

— Block Copolymer PEO(3100)-b-dPS(17100)-b-PEO(3100), $PI=1.15$

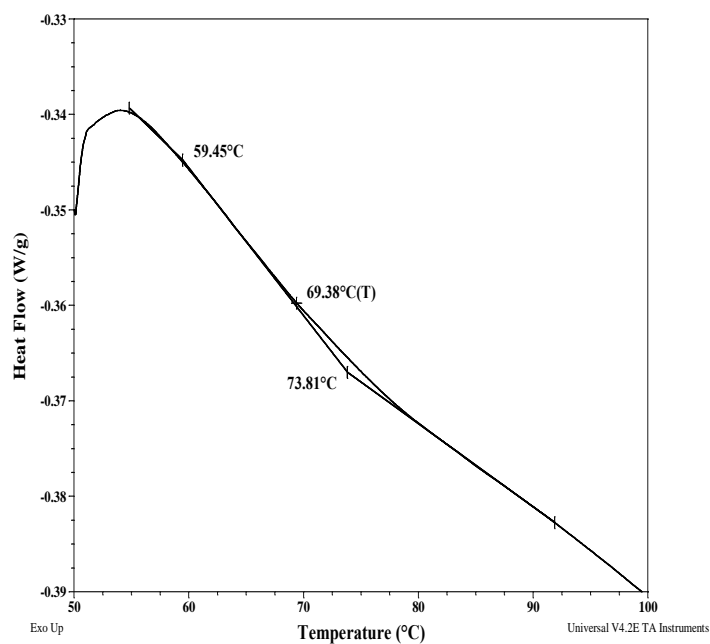
Thermal analysis of the sample# P9064-EOdPSEO

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Thermogram for PEO block:



Thermogram for PS block:



Thermal analysis results at a glance

| For PS block | | |
|---------------|--------------|-------------------|
| T_g : 69°C | | |
| For PEO block | | |
| T_g : -56°C | T_m : 29°C | T_c : Not found |

Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Melting curve for PEO block

