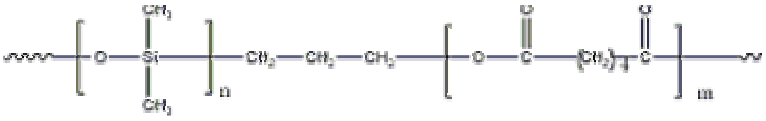
**Sample Name:**
**Poly(dimethyl siloxane -b- adipic anhydride)**

**Sample #: P4098- DMSAAnh**

**Structure:**



**Composition:**

| Mn x $10^3$ DMS-b-AAnhy | PDI |
|---|---|
| 8.0-b-33.0 | - |

**Synthesis Procedure:**

Poly(dimethyl siloxane -b- adipic anhydride) is prepared by living anionic polymerization of dimethyl siloxane and coordination polymerization of adipic anhydride.

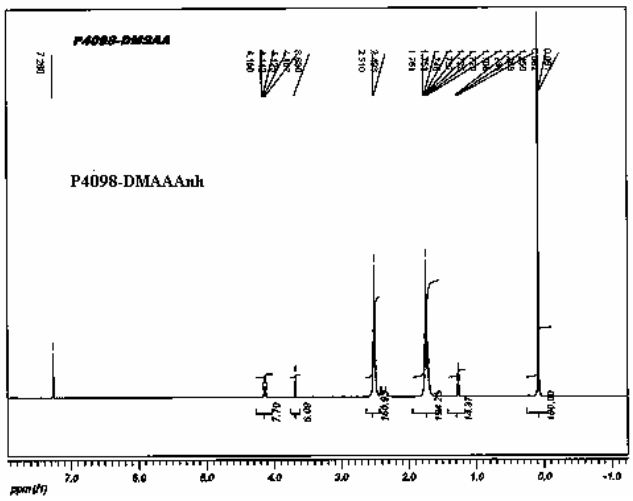
**Characterization:**

An aliquot of the anionic poly(dimethyl siloxane) block was terminated before addition of adipic anhydride and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from $^1$H-NMR spectroscopy by comparing the peak area of the dimethyl siloxane protons with the adipic anhydride protons.

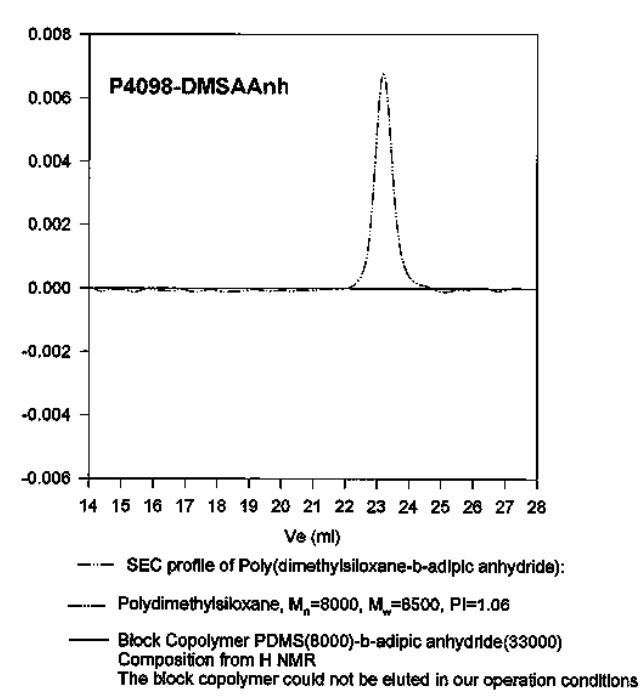
**Solubility:**

Poly(dimethyl siloxane -b-adipic anhydride) is soluble in $CHCl_3$, DMF and precipitated out from cold ethanol, diethyl ether.

**$^1$H-NMR Spectrum of the block copolymer:**




**SEC for the polymer:**



## Thermal analysis of the sample# P4098-EOAAnh

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10$^{o}$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 ($T_g$).

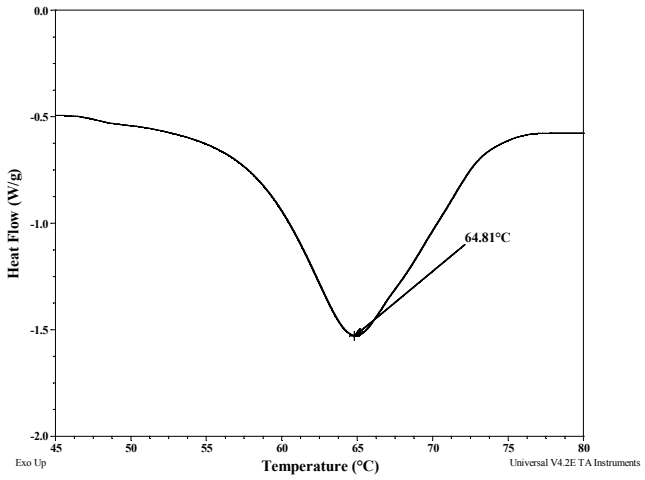
### Melting and crystallization curve for the sample

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.

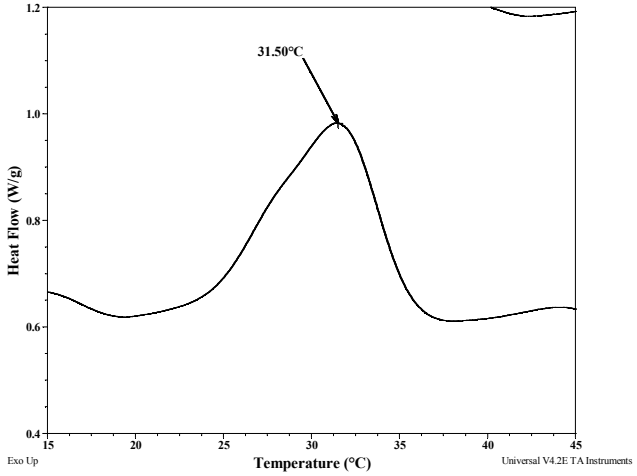
### Typical thermal analysis results at a glance

| Sample | $T_m$ ($^{o}$C) | $T_c$ ($^{o}$C) | $T_g$ ($^{o}$C) |
|---|---|---|---|
| DMS | -41 | -62 | -127 (lit) |
| AAnh | 65 | 32 | 22 |

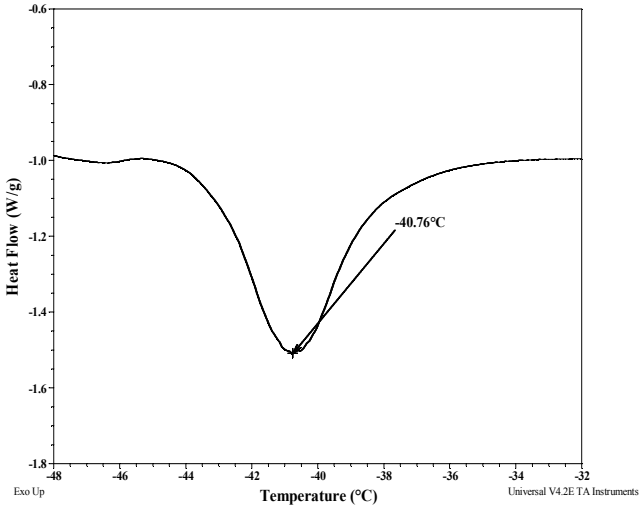
### Melting curve for AAnh block:



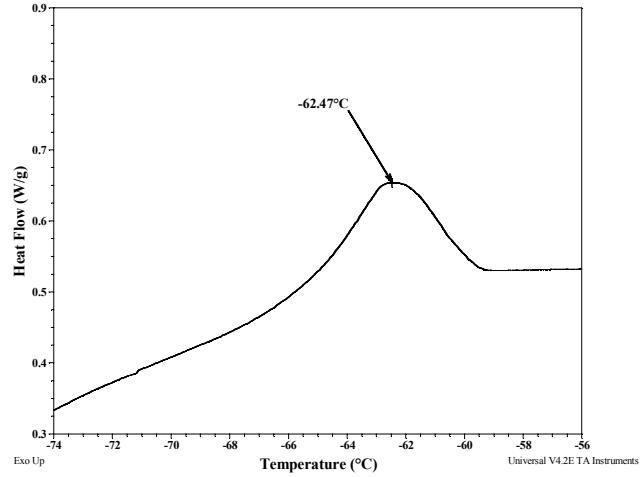

### Crystallization curve for AAnh block:




### Melting curve for DMS block:




### Crystallization curve for DMS block:




### DSC thermogram for AAnhydride block: