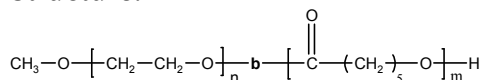


Sample Name:

Poly(ethylene oxide -b- adipic anhydride)

Sample #: P4090- EOAAAnh**Structure:****Composition:**

Mn x 10 ³	PDI
PEO-b-PAAAnh	
5.0-b-2.6	-

Synthesis Procedure:

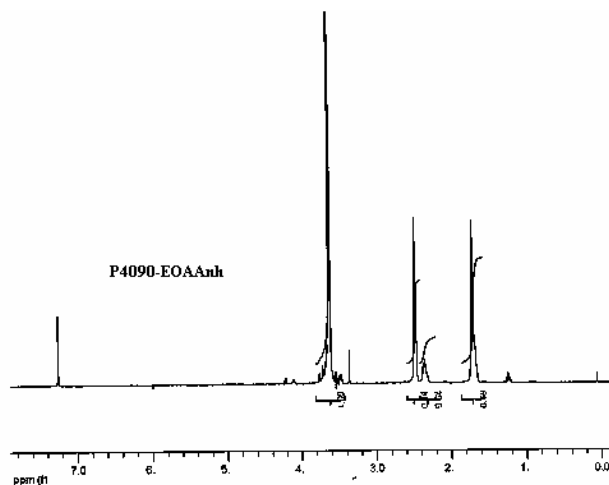
Poly(ethylene oxide -b- adipic anhydride) is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of adipic anhydride.

Characterization:

An aliquot of the anionic poly(ethylene oxide) 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 ¹H-NMR spectroscopy by comparing the peak area of the ethylene oxide protons at about 3.6 ppm with the adipic anhydride protons.

Solubility:

Poly(ethylene oxide -b- adipic anhydride) is soluble in CHCl₃, DMF, toluene and precipitated out from cold ethanol, diethyl ether.

¹H-NMR Spectrum of the block copolymer:

Thermal analysis of the sample# P4090-EOAAnh

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).

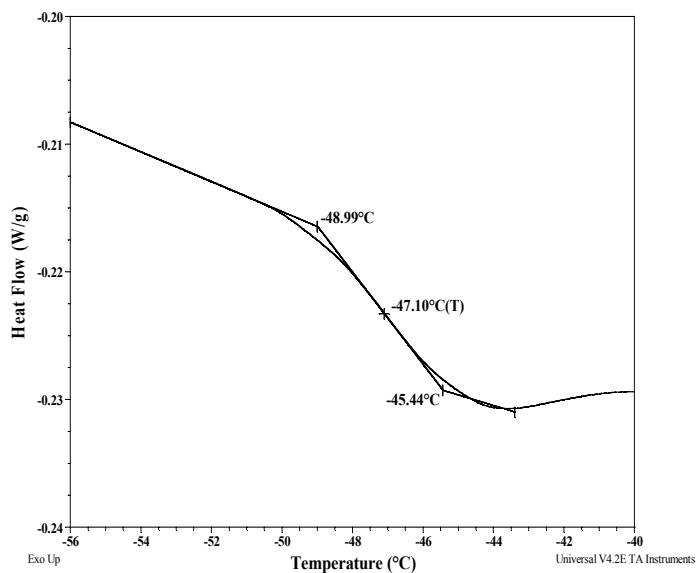
Melting and crystallization curve for the sample

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.

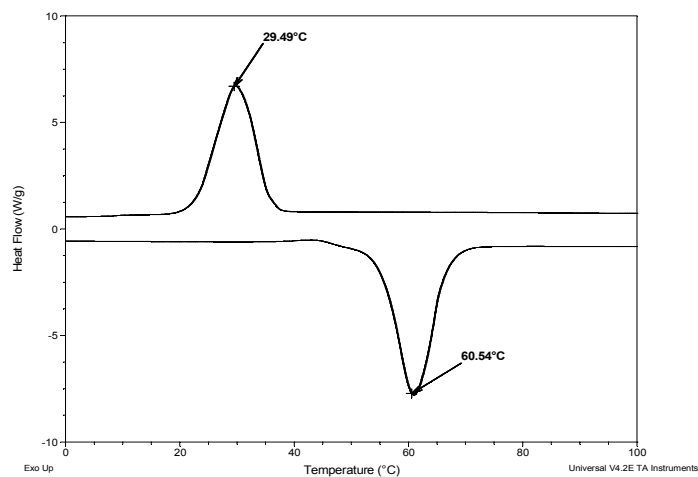
Typical thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
EO	61	29	-65
AAAnhyd	62	31	29
EOAAnh	57	33	-47

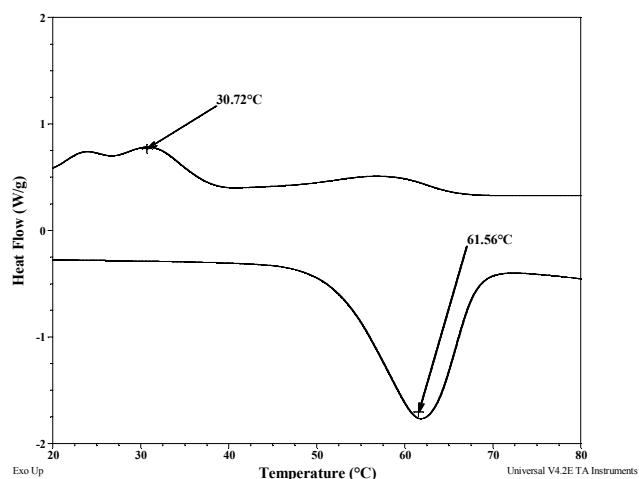
Typical thermogram for the PEO block



Thermogram of poly (ethylene glycol) methyl ether (Mn≈5000)



Thermogram of adipic anhydride (Mn≈5000)



Thermogram of EOAAnh diblock polymer:

