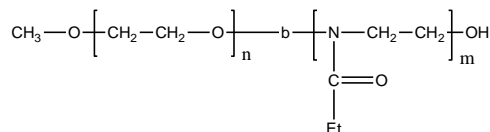


**Sample Name:** Poly(ethylene oxide -b- 2-ethyl oxazoline)

**Sample #:** P7424-EOEOXZ

**Structure:**

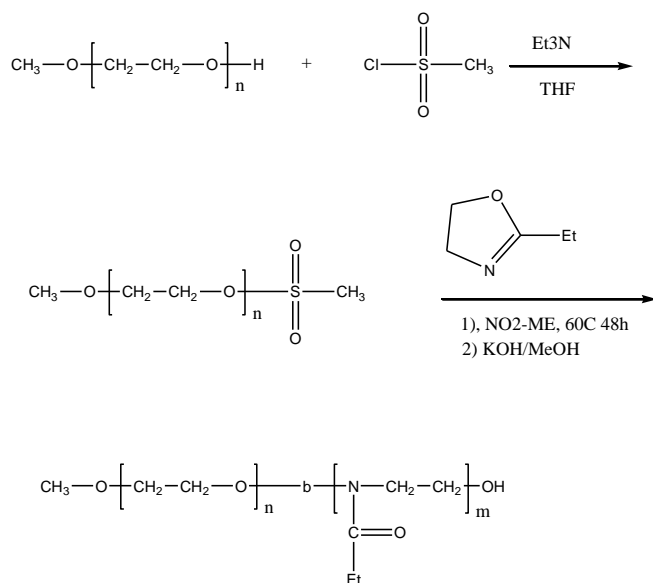


**Composition:**

Mn x 10 <sup>3</sup> PEO-b-PEOXZ	PDI
5.0-b-6.3	1.4

**Synthesis Procedure:**

The polymer is prepared as followed scheme:



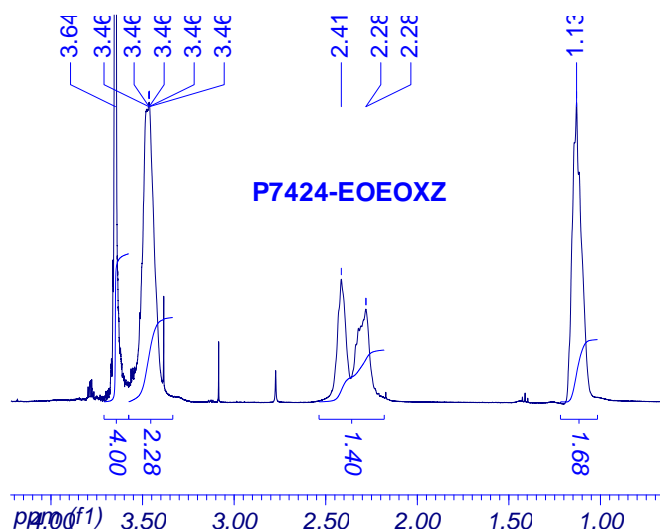
**Characterization:**

The Mn is calculated from NMR by comparing the peak area of the ethylene glycol protons at 3.64 ppm and CH<sub>3</sub> in ethyl oxazoline at about 1.12 ppm and polydispersity index (PDI) are obtained by size exclusion chromatography.

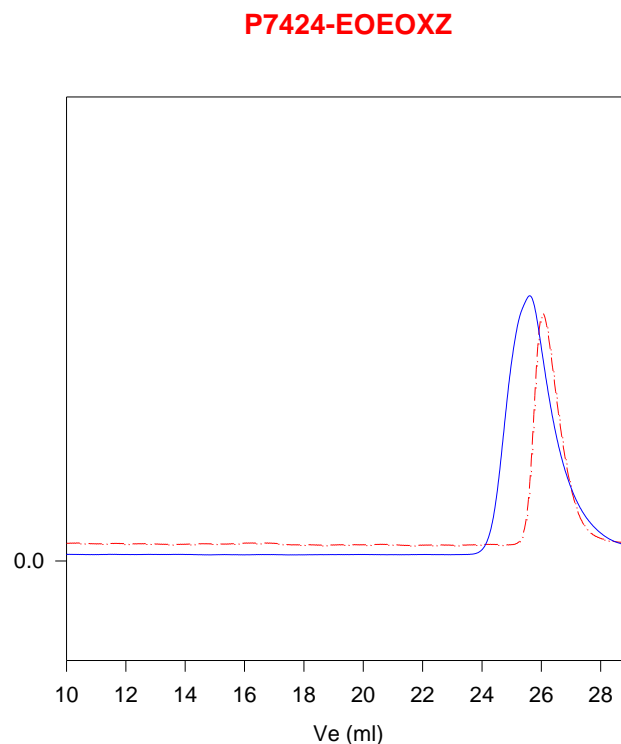
**Solubility:**

The polymer is soluble in THF, water, CHCl<sub>3</sub> and precipitated in hexane and ether.

**<sup>1</sup>H-NMR Spectrum of the block copolymer:**



**SEC of the block copolymer:**



Size exclusion chromatography of the polymer

--- PEO, M<sub>n</sub>=5000, M<sub>w</sub>=5500, Mw/Mn=1.1

— Poly(ethylene oxide-b-ethyl oxazoline)

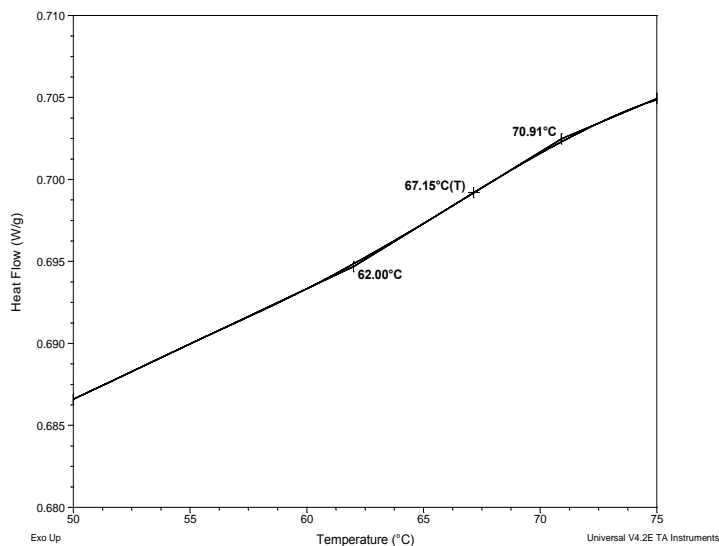
Mn: PEO(5000)-b-EOXZ(6300) Mw/Mn=1.4

## Thermal analysis results at a glance

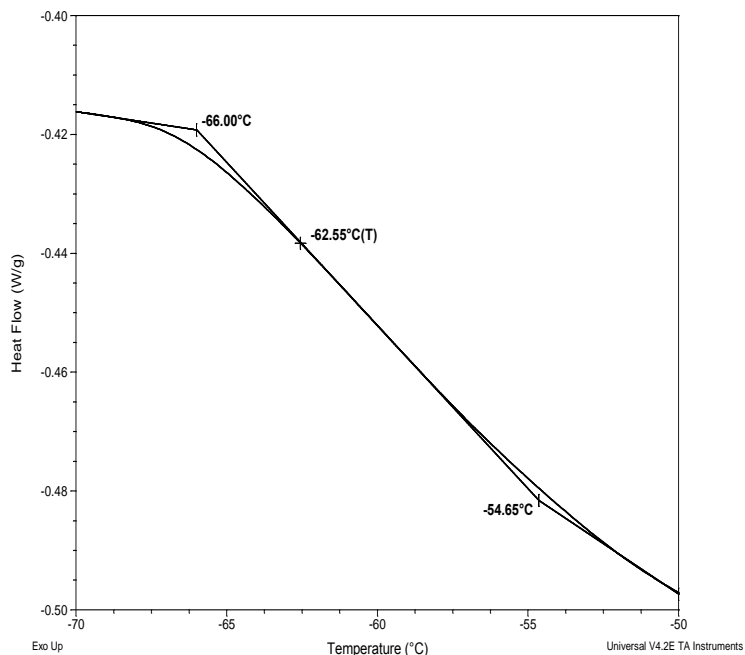
### Thermal analysis of the sample# P7424-EOEOXZ

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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 EOXZ block:



#### Thermogram for PEO block



#### For Ethyl oxazoline block

$T_g$ : 67°C	$T_m$ : Not found	$T_c$ : Not found
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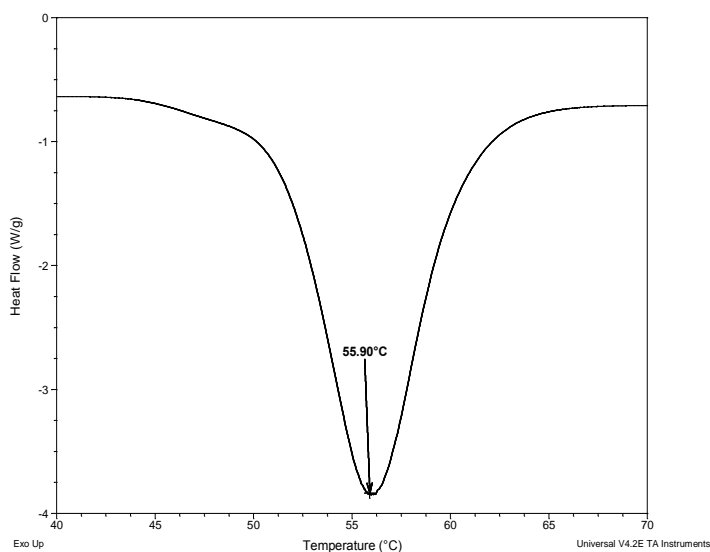
#### For PEO block

$T_g$ : -63°C	$T_m$ : 56°C	$T_c$ : 28°C
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### 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



#### Crystallization curve For PEO block

