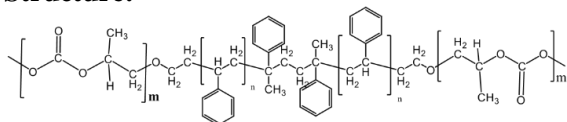


Sample Name:

Poly(propylene carbonate)-b-poly(styrene)-b-poly(propylene carbonate)

Sample#: **P43060C-PPCSPPC**

Structure:



Composition:

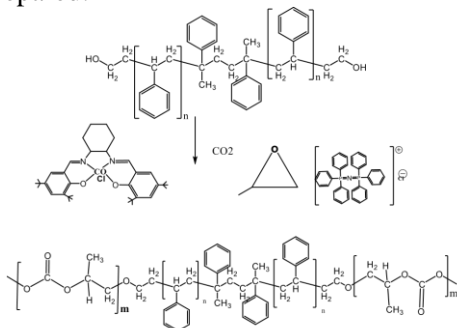
Mn x 10 ³ PPC-S-PPC	PDI
7.0-10.0-7.0	1.10

Thermal properties:

Tg for PPC block	Tg for PS block
34 °C	91 °C

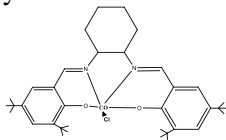
Synthesis Procedure:

The following reaction scheme shows how the product was prepared:



Purification:

The polymer was purified to remove homopolycarbonate fraction generated by Ionic polymerization of Propylene oxide by the following catalyst : (R,R)-N,N'-Bis(3,5-di-tert-butylsalicylidene)-1,2-cyclohexanediaminocobalt(II) chloride used in the synthesis:



Product was purified to remove:

1. Homopolystyrene if any
2. Homopoly propylene carbonate

Using solvent /non solvent mixture and the purification followed by SEC profile.

Characterization:

Polymer analyzed by size exclusion chromatography (SEC) and ¹H-NMR data analysis.

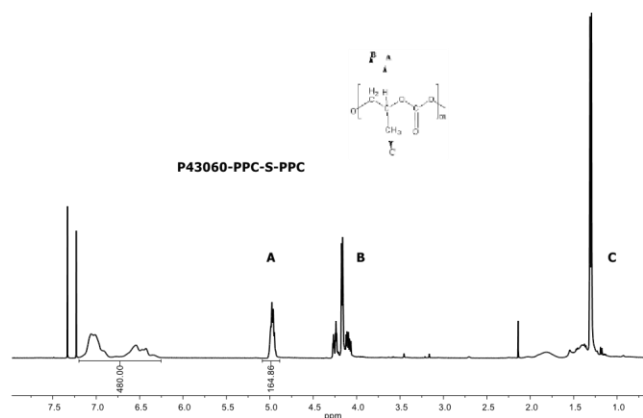
Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter under a nitrogen atmosphere at a heating rate of 10 oC/min.

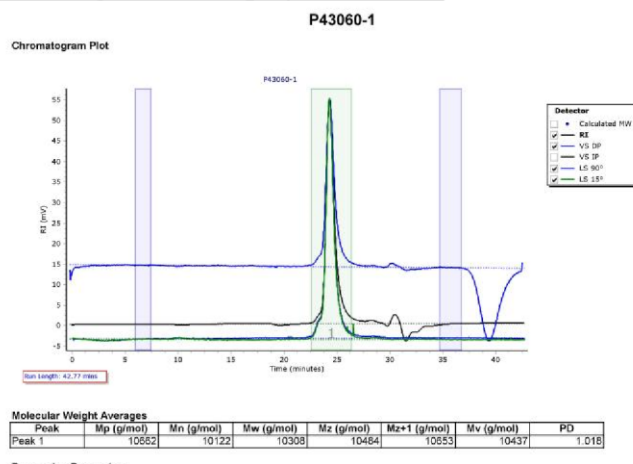
Solubility:

The polymer is soluble in THF, toluene, and CHCl₃.

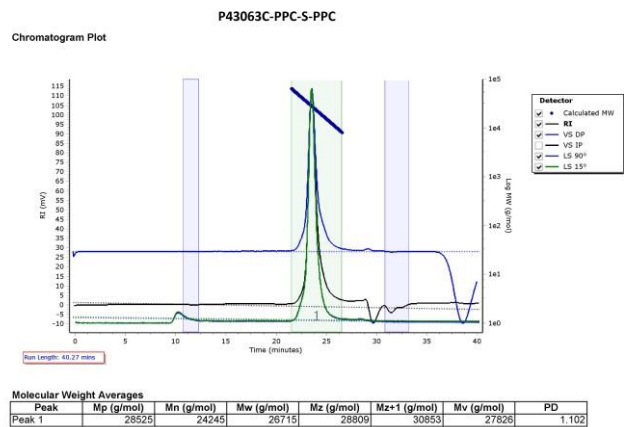
¹H-NMR Spectrum of the product:



SEC elugram of the polymer S2OH:

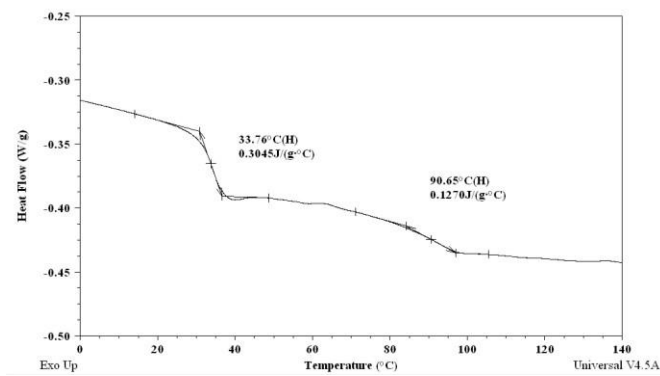


SEC elugram of the polymer:



DSC thermogram of the polymer:

The glass transition temperature (T_g) for PPC and PS blocks were obtained from the second heating scan at a rate of $10\text{ }^{\circ}\text{C}/\text{min}$.



* Lowering T_g of PS is related to certain miscibility between PPC and PS blocks.