



Product Profile

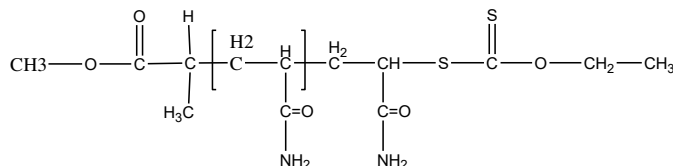
Identification

Product Name: Poly(Acrylamide)

Product Lot Number: P20224A-AMD

CAS #: 9003-05-8

Chemical Architecture:

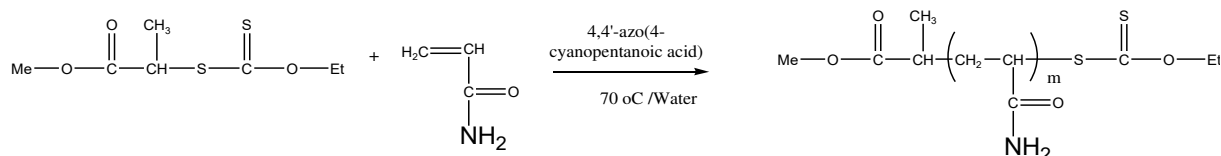


Composition:

| | |
|-------------------------------------|--------------|
| Mn (g/mole) | 3,500 |
| Mw (g/mole) | 4,000 |
| Mw/Mn | 1.05 |
| Tg (°C) | 184 |
| dn/dc (mL/g) in THF at 30 °C | 0.180 |

Method of Synthesis

Poly (acrylamide) is synthesized by RAFT polymerization of acrylamide using 4,4'-azo(4-cyanopentanoic acid) as initiator and xanthate as chain transfer agent. The reaction scheme is shown below:



Solubility in different solvents:

| | |
|---------|---|
| Water | √ |
| THF | X |
| Alcohol | X |

Validation of Architecture

A. Gel Permeation Chromatography (GPC), SEC Profile:

Polyacrylamide was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI) using water containing 0.1M NaNO₃ and 0.01M NaH₂PO₄ and 4 vol% acetonitrile as eluent.

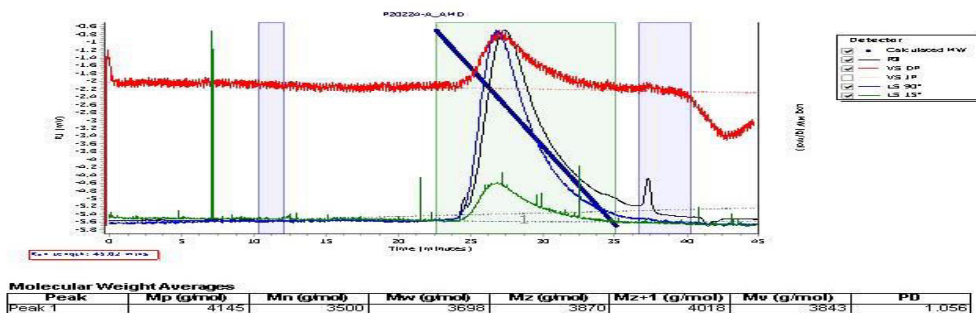


Polymer Source,™ Inc.

Agilent GPC/SEC Software

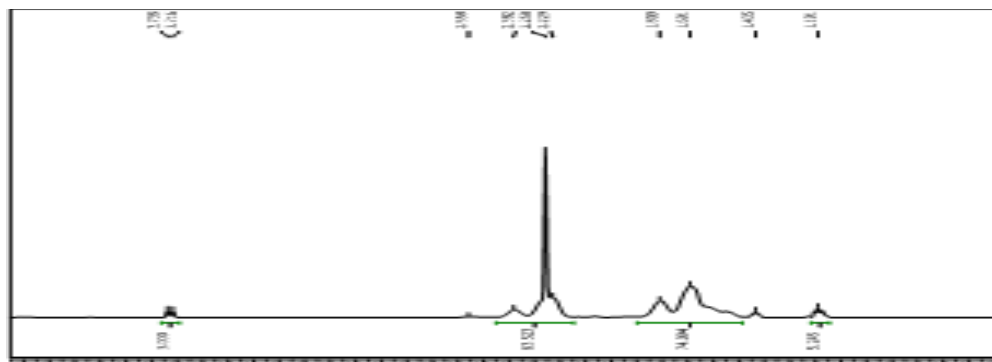
P20224-A_AMD

Chromatogram Plot

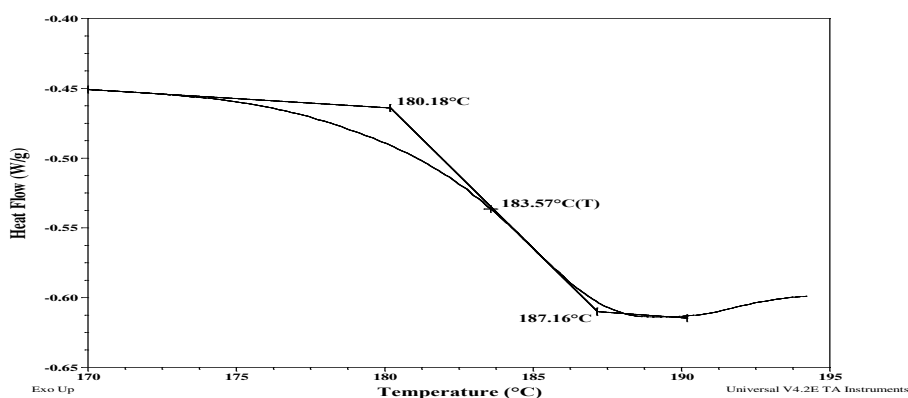


B. NMR (^1H NMR) of CL

sample was dissolved in D_2O . ^1H NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer



C. DSC thermogram for the polymer:



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