

## Product Profile

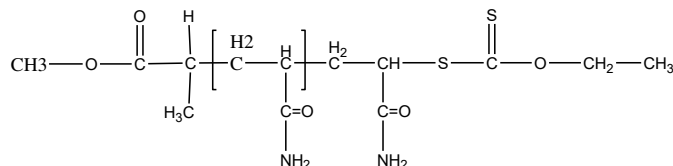
### Identification

**Product Name:** Poly(Acrylamide)

**Product Lot Number:** P7562D-AMD

**CAS #:** 9003-05-8

**Chemical Architecture:**

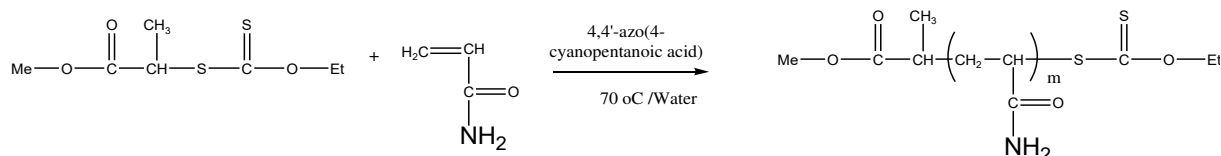


**Composition:**

<b>Mn (g/mole)</b>	<b>9,500</b>
<b>Mw (g/mole)</b>	<b>13,500</b>
<b>Mw/Mn</b>	<b>1.40</b>
<b>Tg (°C)</b>	<b>184</b>
<b>dn/dc (mL/g) in THF at 30 °C</b>	<b>0.180</b>

### 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 NaNO<sub>3</sub> and 0.01M NaH<sub>2</sub>PO<sub>4</sub> and 4 vol% acetonitrile as eluent.

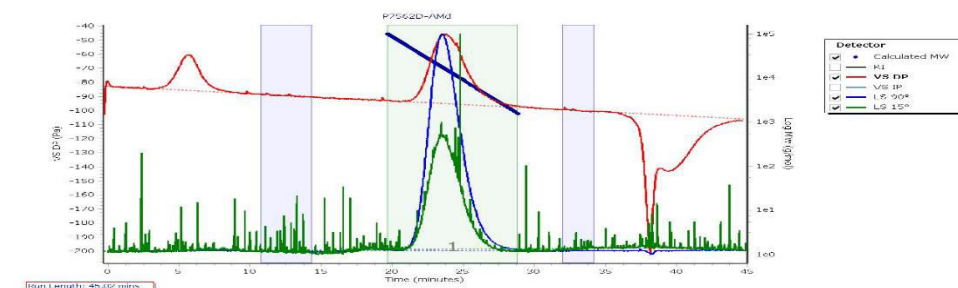


Polymer Source,™ Inc.

Agilent GPC/SEC Software

P7562D-AMd

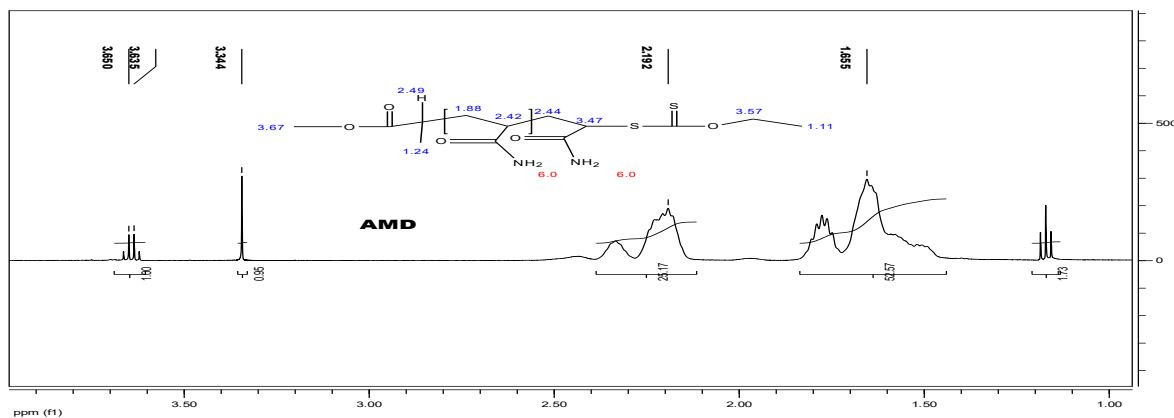
Chromatogram Plot



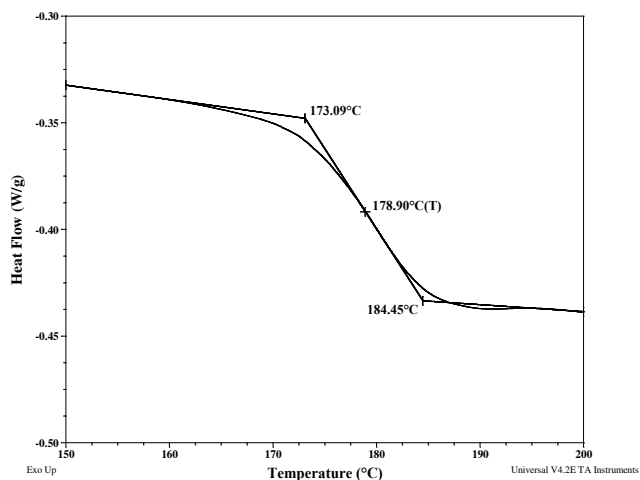
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	10121	9521	13353	17287	21298	16358	1.403

## B. NMR (<sup>1</sup>H NMR) of CL

sample was dissolved in D<sub>2</sub>O. <sup>1</sup>H NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer



## C. DSC thermogram for the polymer:



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