

## Product Profile

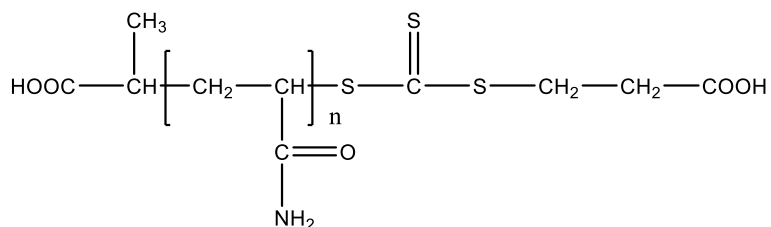
### Identification

**Product Name:** Poly(Acrylamide)

**Product Lot Number:** P6707A-AMD

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

**Chemical Architecture:**

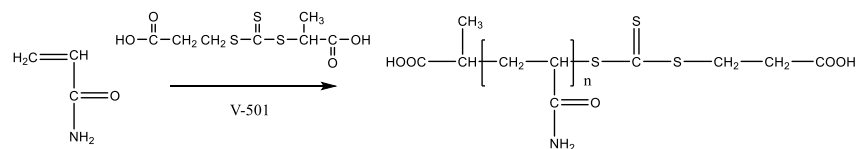


**Composition:**

<b>Mn (g/mole)</b>	<b>19,000</b>
<b>Mw (g/mole)</b>	<b>24,500</b>
<b>Mw/Mn</b>	<b>1.30</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 trithiocarbonate as chain transfer agent in water. The reaction scheme is shown below:



**Solubility in different solvents:**

Water	√
THF	X
Alcohol	X

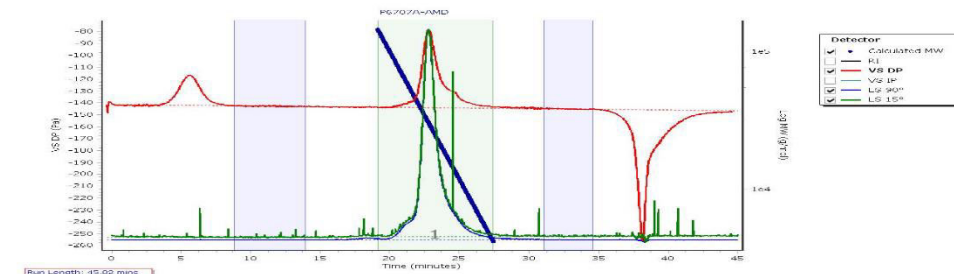
## Validation of Architecture

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

Polyacrylamide and 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.

#### Agilent GPC/SEC Software

##### Chromatogram Plot



#### Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	30579	18761	24487	29318	33639	28427	1.305

### B. DSC thermogram for the polymer:

