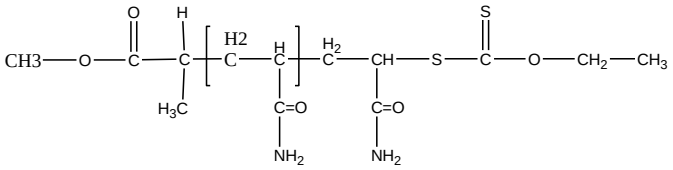
Sample Name: **Poly (Acrylamide)**

Sample #: **P20234A-AMD**

Structure:

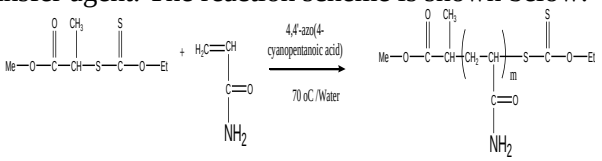


Composition:

Mn $\times 10^3$	Mw/Mn (PDI)
6.0	1.2
T_g (^oC)	184

Synthesis Procedure:

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:



Characterization:

Polyacrylamide and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI) using water containing 0.1M $NaNO_3$ and 0.01M NaH_2PO_4 and 4 vol% acetonitrile as eluent. The polymer architecture was also verified by ^{1}H-NMR spectroscopy by comparing the peak area of the terminal moieties bearing xanthate unit. The molecular weigh can also be varied by HNMR and by SEC the distribution of the polymer calculated using poly acrylic acid standards polymers.

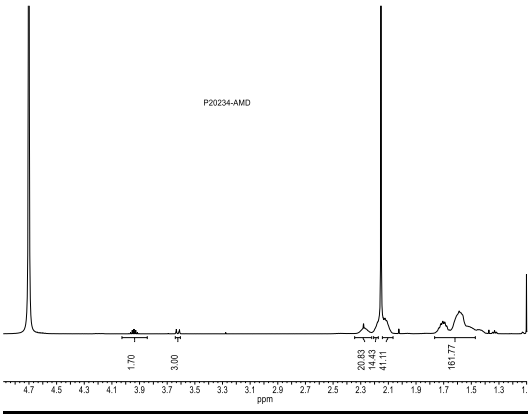
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10^{o}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).

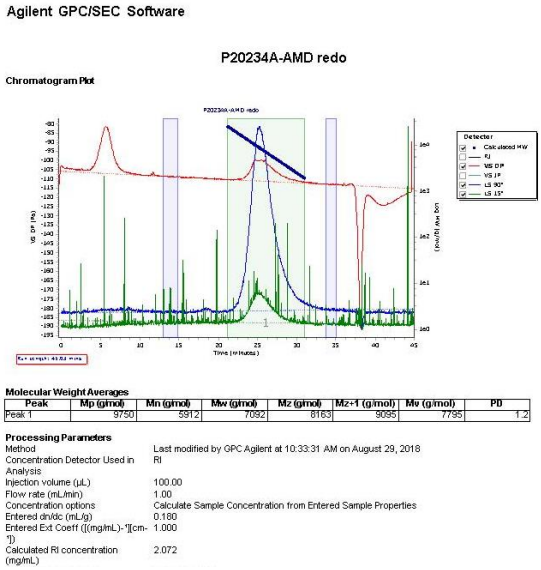
Solubility:

Polymer is soluble in water.

^{1}H-NMR Spectrum of the Polymer:



SEC elugram of the polymer:



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	9750	5912	7092	8163	9095	7795	1.2

Processing Parameters

Method	Last modified by GPC Agilent at 10:33:31 AM on August 29, 2018
Concentration Detector Used in Analysis	RI
Injection volume (µL)	100.00
Flow rate (mL/min)	1.00
Concentration options	Calculate Sample Concentration from Entered Sample Properties
Entered dn/dc (mL/g)	0.180
Entered Ext Coeff ([(mg/mL)-1[cm-1])	1.000
Calculated RI concentration (mg/mL)	2.072

DSC thermogram for the polymer: