

Poly(2-ethylhexyl methacrylate)

Thermal Characterization Report

Analyzed by Polymer Solutions Incorporated

Date Tested: 04-16-18 Report ID: 41106

PEHMA Batch# 171024-E0289-C

Differential Scanning Calorimetry (DSC)

The thermal properties of the sample were tested in accordance with PSI Method ID 917 Revision 7 using a TA Instruments Q200. A portion of the sample was cut and approximately 10 mg weighed and sealed in an aluminum sample pan. The sample was equilibrated at -80°C, heated to 200°C, cooled to -80°C, and reheated to 200°C, all at a rate of 10°C per minute in a nitrogen environment. The software provided by the instrument manufacturer (TA WinUA) was utilized for data analysis. The two heat cycles for the sample were overlaid (Figure 1). Note that the two cycles have been vertically offset from one another so that the markings are more legible.

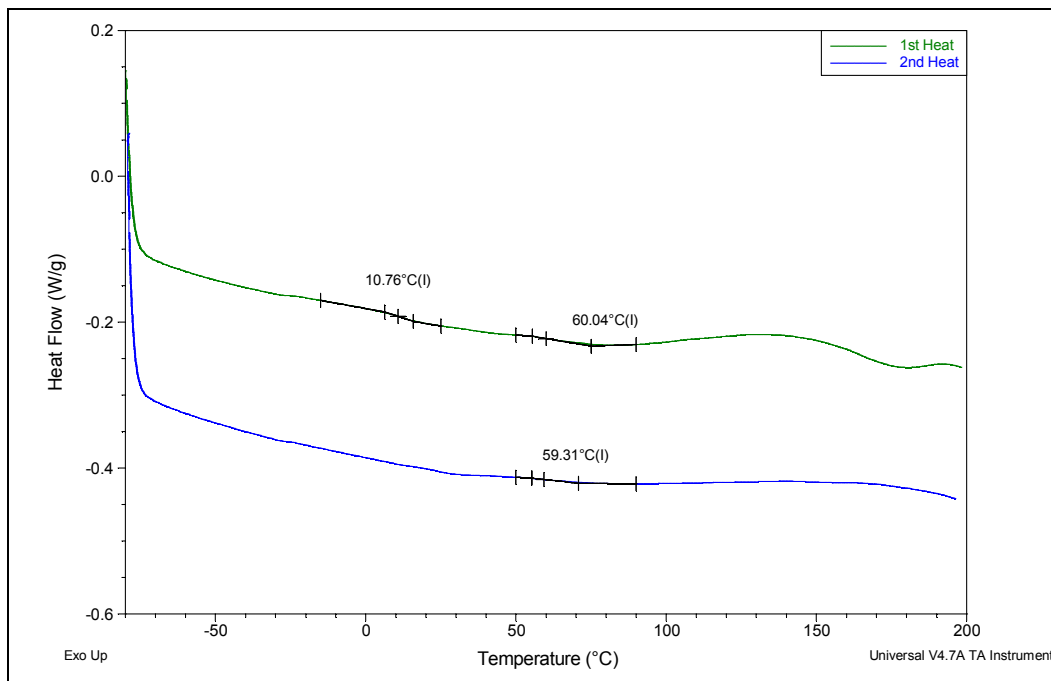


Figure 1. Overlay of DSC thermogram for sample PEHMA Batch #: 171024-E0289-C (PSI 19908-01).

Table 1. Summary of DSC Results.

Client Identification	PSI Identification	Heat Cycle	Transition 1, °C	Tg, °C
PEHMA Batch #: 171024-E0289-C	19908-01	1	10.8	60.0
		2	--	59.3

--: Not detected in this test cycle.

Thermogravimetric Analysis (TGA)

The sample was tested by TGA in accordance with PSI Method ID 920 Revision 8. A portion of the sample weighing approximately 15 mg was prepared in a platinum TGA pan for analysis. The sample was heated from 30 to 900°C at 10°C per minute in a nitrogen environment using a TA Instruments Q500 TGA. The software provided by the instrument manufacturer (TA WinUA) was used to plot the data and measure the remaining weight percent at 895°C. Results are provided in Figure 2 with numerical results summarized in Table 2.

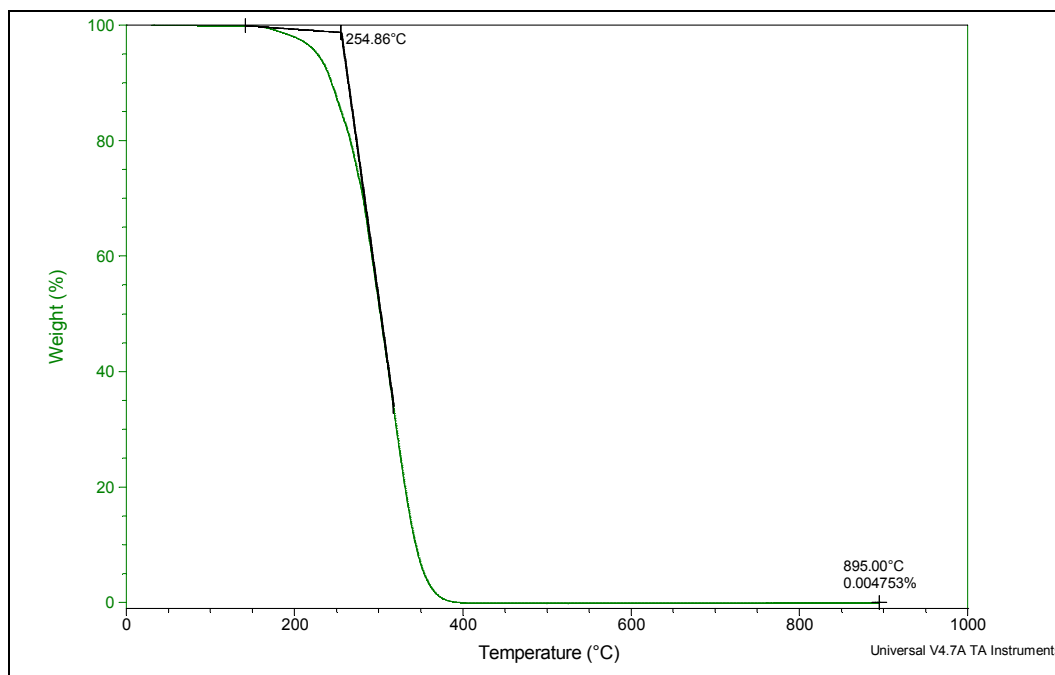


Figure 2. TGA thermogram from PEHMA Batch #: 171024-E0289-C (PSI 19908-01).

Table 2. Summary of TGA Results.

Client Identification	PSI Identification	Degradation Onset, °C	Wt% at 895°C
PEHMA Batch #: 171024- E0289-C	19908-01	254.9	0.0

Conclusions

The PEHMA sample (PSI 19908-01) was tested by DSC and exhibited a glass transition temperature around 60°C. There was an additional subtle endothermic transition near 10°C in the first heating cycle. The sample was also tested by TGA in nitrogen. The thermal degradation onset temperature was about 255°C and any inorganic content of the sample was below the detectable limits of the instrument.