GPC Application Note #2

Advanced GPC Analysis of Poly(methyl methacrylate)

Poly(methyl methacrylate) (PMMA) is a synthetic organic polymer made from the polymerization of methyl methacrylate monomers. PMMA is commonly known as Acrylic or Plexiglas. It is found in bank teller windows, ice hockey rinks, and aquariums. Molecular Weight Distribution (MWD) and IV are key property control parameters in the manufacturing process and product diagnostics. The purpose of this App Note is to demonstrate the repeatability of the HMJ Advanced GPC Method. The samples were analyzed using a Malvern Triple Detector GPC system. The analysis conditions are listed below.

Solvent	THF		Sample Conc	2 mg/mL
Columns	2 X Shodex KF-806M		Dissolution Temp	25C
Flow Rate	1 mL/min		Dissolution Time	60 Minutes
Column Temp	30C		Sample Filtration	0.2 um Teflon

Figure: Triple Chromatogram of PMMA-95K Sample

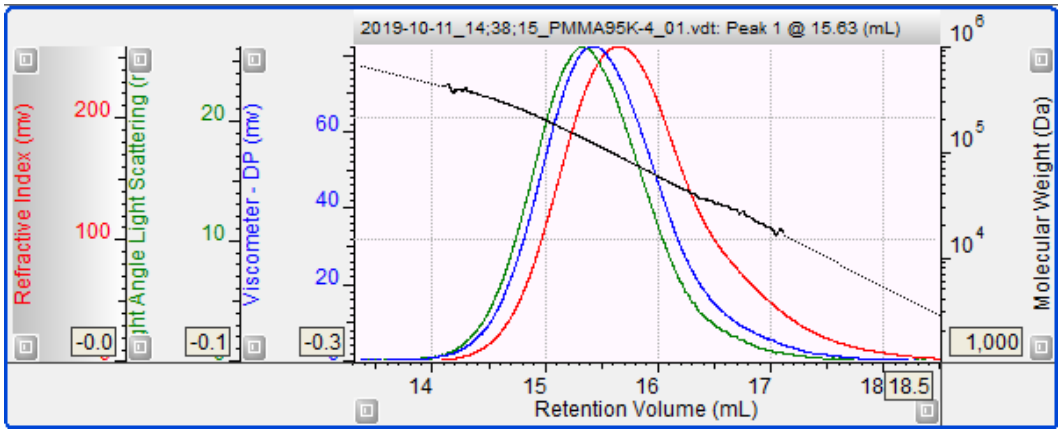

Table: Summary of Analysis of Polymethyl Methacrylate Standards

Results	Runs	dn/dc	Mw	Mn	IV	mg/vial
PMMA-95K AVG	6	0.0854	93,164	45,642	0.347	21.48
SD			1,046	1,199	0.003	0.18
RSD			1.12%	2.63%	1.01%	0.84%

The results show consistent MWD and IV data for the PMMA95K sample.