GPC Application Note #8

Advanced GPC Analysis of Hydroxypropyl Methylcellulose

Hydroxypropyl Methylcellulose (HPMC) is a bio-derived, inert, viscoelastic polymer that is used in eye drops, drug excipient, and controlled-release, as well as in a variety of commercial products such as food additives. This Advanced GPC Method not only provides Molecular Weight and Intrinsic Viscosity data for the samples, but it can also compare the structural/substitution difference between samples through the Mark-Houwink relationship. The following samples were analyzed using a Malvern Triple Detector GPC System. The analysis conditions are listed below.

Solvent	0.1M PBS, pH 7		Sample Conc	2 mg/mL
Columns	2 X Shodex SB-806M HQ		Dissolution Temp	25C
Flow Rate	1 mL/min		Dissolution Time	60 Minutes
Column Temp	30C		Sample Filtration	0.2 um Nylon

Figure: Triple Chromatogram of a typical HPMC sample

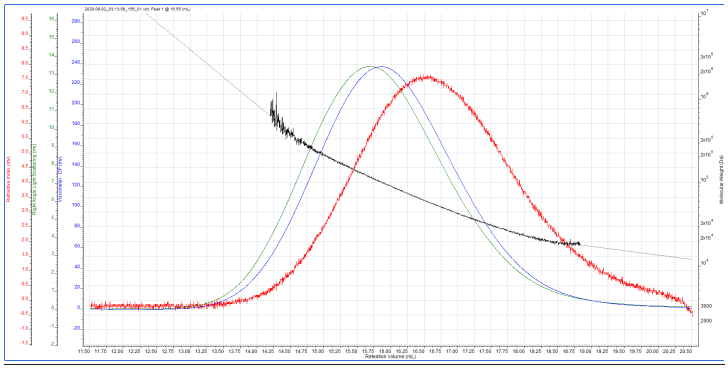

Table: Analysis summary of a typical HPMC sample

Sample Id	Mw	Mn	PDI	IV
HPMC-1A	78,807	43,294	1.82	2.64
HPMC-1B	82,924	43,431	1.91	2.70
HPMC-2A	77,884	41,793	1.86	2.59
HPMC-2B	80,032	39,922	2.00	2.64
Average	79,912	42,110	1.90	2.64
SD	2192	1637	0.08	0.04
RSD	2.74%	3.89%	4.16%	1.66%

The results show consistent MWD and IV data for a typical HPMC sample.