Gel Permeation Chromatography (GPC)

- Accurate Molecular Weight Analysis: Measures absolute and relative molecular weights (Mn, Mw, Mz) and molecular weight distribution of polymers.
- Flexible Detector Integration: Compatible with RI (Refractive Index), Viscometer and LS detector.
- Advanced Column Options: Supports PLgel Mixed, PL aquagel-OH and other Agilent columns tailored for organic and aqueous GPC separations.
- Powerful Software: Includes Agilent GPC/SEC software with integrated data analysis, peak integration, calibration, and reporting tools.
- Broad Solvent Compatibility: Suitable for use with both organic (e.g., THF) and aqueous solvents, covering a wide range of polymer types.
- High Throughput and Reproducibility: Offers automated sample handling and consistent flow control for reproducible results.
- Temperature-Controlled Column Oven: Ensures stable separation conditions for temperature-sensitive polymers.
- Low Detection Limits: Sensitive detection of low-concentration polymer solutions.

Detector (GPC)	Specifications
RI (Refractive Index)	Universal concentration detector. Principle: Measures change in refractive index between the mobile phase and the analyte solution. Use: Provides the concentration profile of eluted species. Limitation: Not suitable for gradient elution; best with isocratic conditions
Viscometer (Differential Viscometer)	Purpose: Measures intrinsic viscosity ($[\eta]$) of polymer in solution. Principle: As polymer elutes, it flows through capillaries or flow cells; pressure drop is correlated to viscosity. Use: Determines molecular size, branching, conformation, and helps calculate Mark-Houwink parameters when combined with molecular weight data. Important For: Differentiating between linear and branched polymers.
Light Scattering Detector	(Typically Static Light Scattering (SLS) or Multi-Angle Light Scattering (MALS)) Purpose: Provides absolute molecular weight (independent of standards). Principle: Measures intensity of scattered light at one or multiple angles to determine Mw (weight average molecular weight) and Rg (radius of gyration). Use: Most accurate way to determine true molecular weight and polymer size in solution.