

Separation according to branching by PDC

Phase distribution chromatography (PDC) is known for separation of polymers according to the molecular weight. The separation principle is based on the different distribution coefficients of the different species within the stationary phase, which in case of PS consists of non-crosslinked, ultra high molecular weight polystyrene (UHPS). We use the different thermodynamic behaviour of polystyrene with different branching topologies in order to separate them according to branching. At the theta conditions of the UHPS, different distribution equilibrium between mobile and stationary phase of the linear and branched polymers is expected. Therefore different elution of linear architecture and stars with variation in arm number enables separation according to branching by PDC.

