

Product Profile

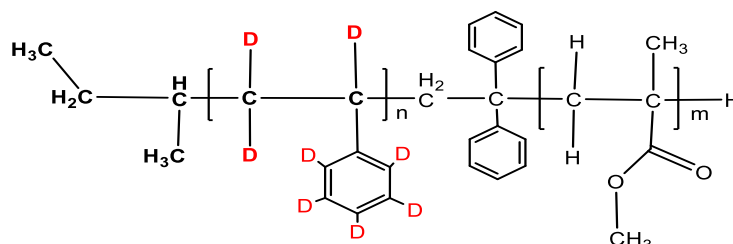
Identification

Product Name: Poly(deuterated styrene (d8)-b-methylmethacrylate)

Product Lot Number: P44700-dPSMMA

CAS #: 25034-86-0 (protonated analog)

Product Chemical Architecture:



Composition:

| | |
|-------------------------------------|---|
| Composition (dPS-b-MMA) | 57,000-b-15,000 |
| MMA mole % | 1.10 |
| Tacticity (atac, iso, syn) | PMMA > 78 % syn |
| Mw/Mn | 1.02 |
| dn/dc (mL/g) in THF at 30 °C | 0.105-0.135 depends on its composition |

Method of Synthesis

The polymer is synthesized by anionic polymerization process.

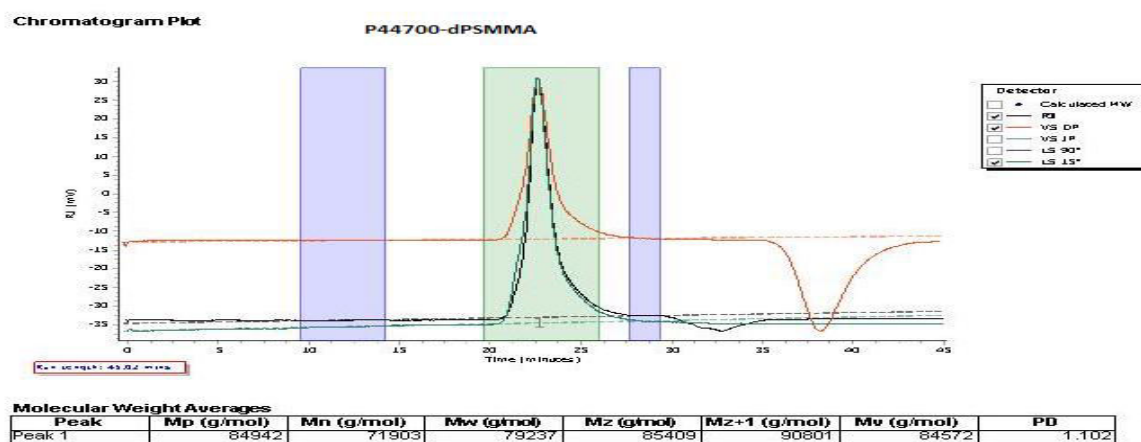
Solubility in different solvents:

| | | | |
|---------|------------------------|-------------------|---|
| THF | √ | DMF | √ |
| Alcohol | X | CHCl ₃ | √ |
| Toluene | Depends on composition | Water | X |

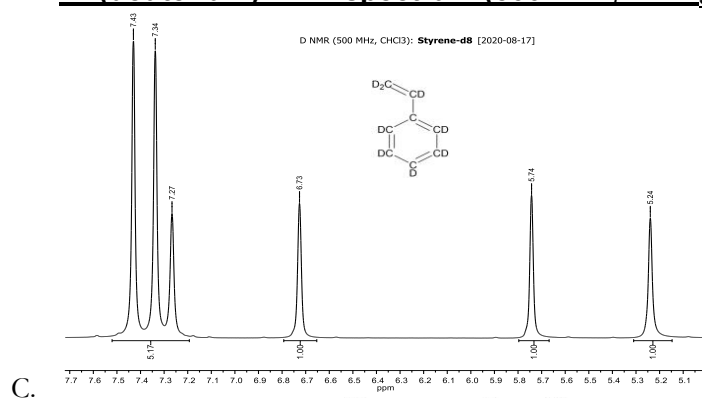
Validation of Architecture

A. Gel Permeation Chromatography (GPC), SEC Profile:

Molecular weights were determined by Agilent Technologie 1260 Infinity II GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LS 15°) and three columns (PLgel, 7.5x300 mm, 5μm-10μm, 10⁵-10⁶Å). THF (stabilized BHT) with 1%(v/v%) TEA was the eluent. The flow rate was 1.0 ml/min.



B. NMR (^1H NMR) of d8 styrene used
 ^2H (deuterium) NMR spectrum (500 MHz, CHCl_3):



C.

