

Product Profile

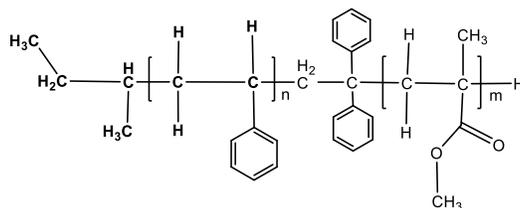
Identification

Product Name: Poly(styrene-b-methylmethacrylate)

Product Lot Number: P19608-R-SMMA

CAS #: 25034-86-0

Product Chemical Architecture:



Composition:

| | |
|-------------------------------------|----------------------|
| Composition (S-b-MMA) | 6,000-b-6,000 |
| MMA mole% | 50.0 |
| Tacticity (atac, iso, syn) | > 80% syn |
| Mn (g/mole) | 12,000 |
| Mw (g/mole) | 13,000 |
| Mw/Mn | 1.10 |
| dn/dc (mL/g) in THF at 30 °C | 0.138 |

Method of Synthesis

The polymer is synthesized by anionic polymerization process.

Solubility in different solvents:

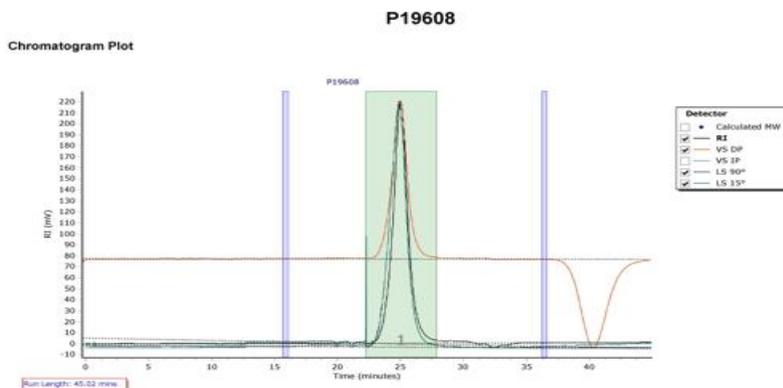
| | | | |
|---------|------------------------|-------------------|---|
| THF | √ | DMF | √ |
| Alcohol | X | CHCl ₃ | √ |
| Toluene | Depends on composition | Water | X |

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.

Agilent GPC/SEC Software



| Molecular Weight Averages | | | | | | | |
|---------------------------|------------|------------|------------|------------|--------------|------------|-------|
| Peak | Mp (g/mol) | Mn (g/mol) | Mw (g/mol) | Mz (g/mol) | Mz+1 (g/mol) | Mv (g/mol) | PD |
| Peak 1 | 12174 | 11502 | 12631 | 13751 | 14930 | 13408 | 1.098 |

B. NMR (¹H NMR) of SMMA

SMMA sample was dissolved in CDCl₃. ¹H NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer.

