

# Product Profile

## Identification

**Product Name:** Poly(styrene-b-methylmethacrylate)

**Product Lot Number:** P4510-R-SMMA

**CAS #:** 25034-86-0

**Product Chemical Architecture:**



**Composition:**

Composition (S-b-MMA)	123,000-b-23,000
MMA mole%	15.5
Tacticity (atac, iso, syn)	> 78% syn
Mn (g/mole)	145,000
Mw (g/mole)	154,000
Mw/Mn	1.06
dn/dc (mL/g) in THF at 30 °C	0.170

## Method of Synthesis

The polymer is synthesized by anionic polymerization process.

**Solubility in different solvents:**

THF	√	DMF	√
Alcohol	X	CHCl <sub>3</sub>	√
Toluene	Depends on composition	Water	X

## Validation of Architecture

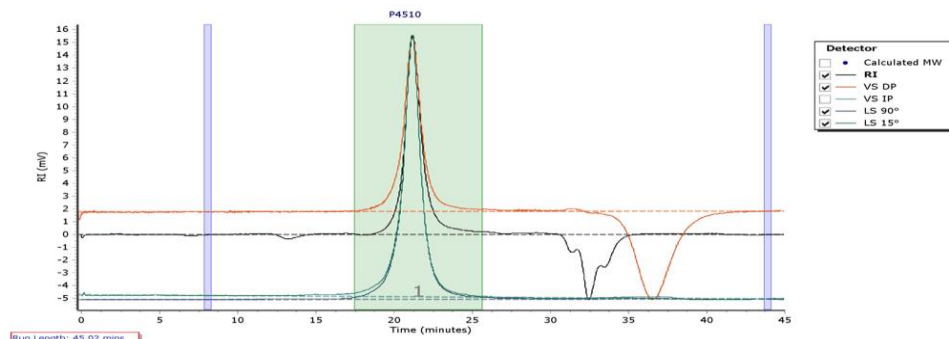
### A. Gel Permeation Chromatography (GPC), SEC Profile:

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, 10<sup>5</sup>-10<sup>6</sup>Å). THF (stabilized BHT) with 1%(v/v%) TEA was the eluent. The flow rate was 1.0 ml/min.

**Agilent GPC/SEC Software**

**P4510**

**Chromatogram Plot**



**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	157508	145337	154362	161711	168669	160565	1.062

**B. NMR ( $^1\text{H}$ NMR) of SMMA**

SMMA sample was dissolved in  $\text{CDCl}_3$ .  $^1\text{H}$  NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer.

