

# Product Profile

## Identification

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

**Product Lot Number:** P4085-R-SMMA

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

**Product Chemical Architecture:**



**Composition:**

Composition (S-b-MMA)	48,000-b-24,000
MMA mole%	33.0
Tacticity (atac, iso, syn)	> 78% syn
Mn (g/mole)	71,500
Mw (g/mole)	72,000
Mw/Mn	1.00
dn/dc (mL/g) in THF at 30 °C	0.154

## 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

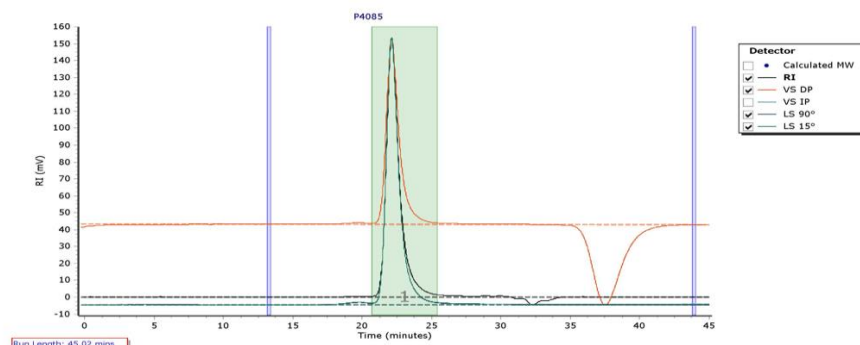
### A. Gel Permeation Chromatography (GPC), SEC Profile:

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**

**P4085**

**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	73050	71505	71710	71900	72077	71882	1.003

**B. <sup>1</sup>H NMR of SMMA**

SMMA sample was dissolved in CDCl<sub>3</sub>. <sup>1</sup>H NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer.

