

Product Profile

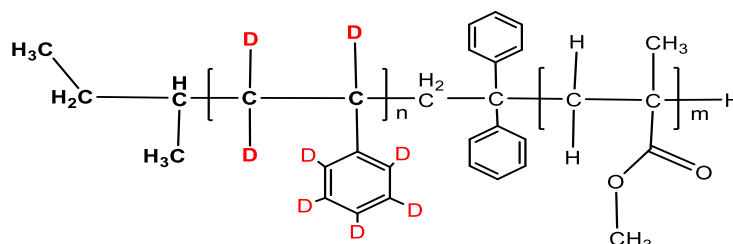
Identification

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

Product Lot Number: P44705-dPSMMA

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

Product Chemical Architecture:



Composition:

Composition (dPS-b-MMA)	51,000-b-37,500
MMA mole %	42.5 %
Tacticity (atac, iso, syn)	PMMA > 78 % syn
Mw/Mn	1.12
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

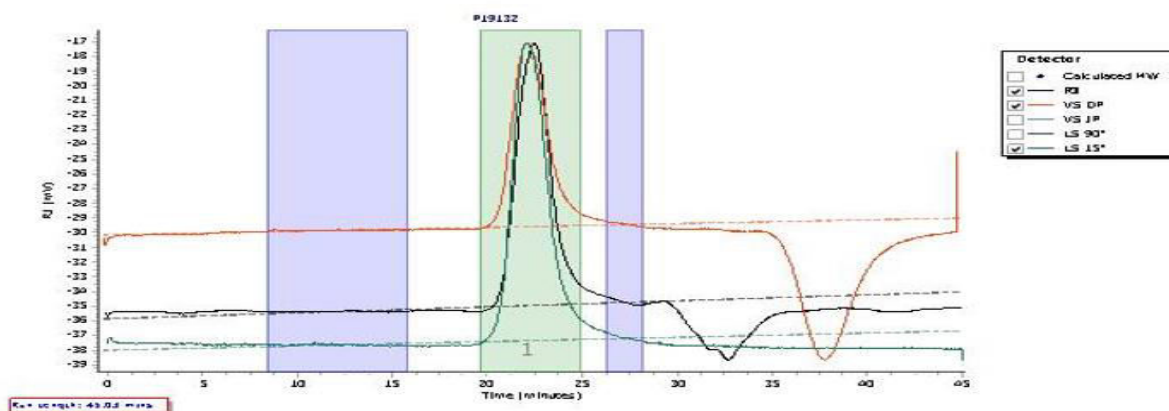
Validation of Architecture

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.

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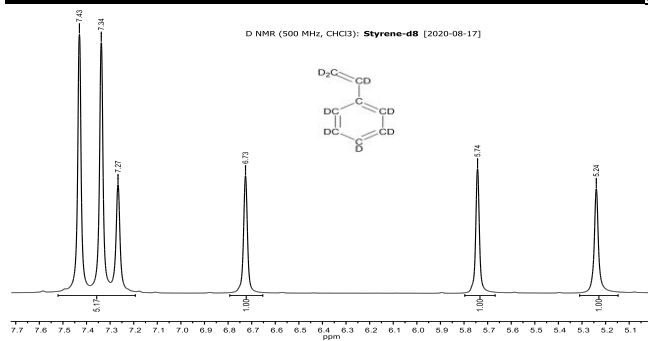
Chromatogram Plot



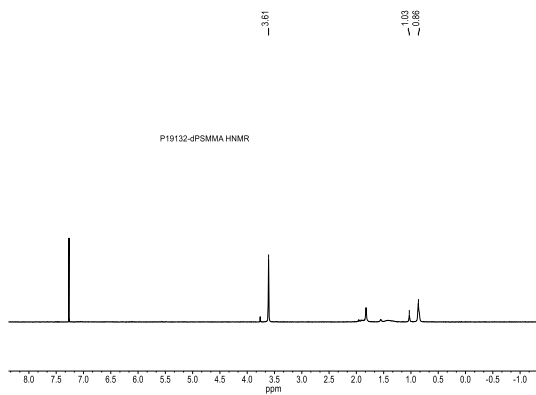
Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	93877	88304	98969	109421	119429	109651	1.121

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



H NMR:



D2 NMR:

