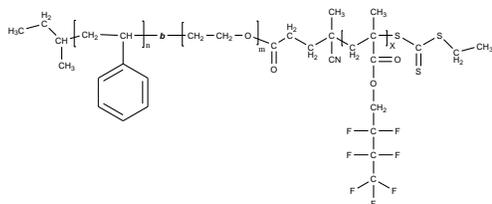


Sample Name: Poly(styrene-b-ethylene oxide-b-2,2,3,3,4,4-Heptafluorobutyl methacrylate)

Sample #: P41578-SEOHFBMA

Structure:



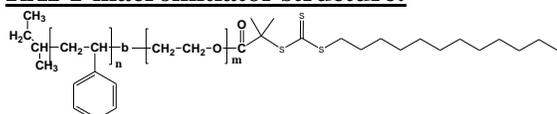
Composition:

| | |
|--|------|
| Mn x 10 ³ S-b-EO-b-HFBMA | PDI |
| 9.0-b-19.5-b-17.0 | 1.10 |

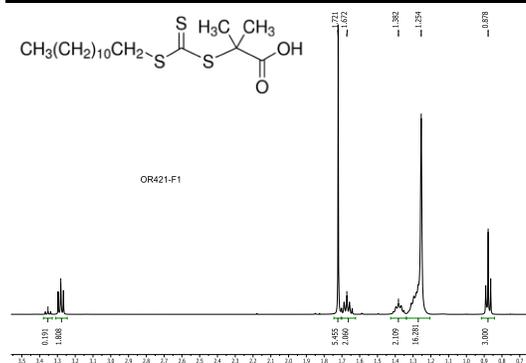
Synthesis Procedure:

The polymer was prepared by combination of anionic and RAFT polymerization process.

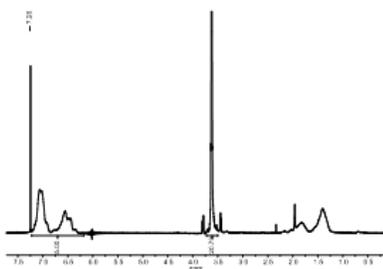
RAFT macroinitiator structure:



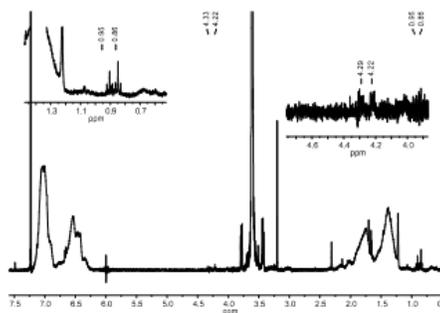
¹H NMR spectrum of the RAFT macroinitiator:



¹H NMR spectrum of the SEO Sample in CdCl₃:



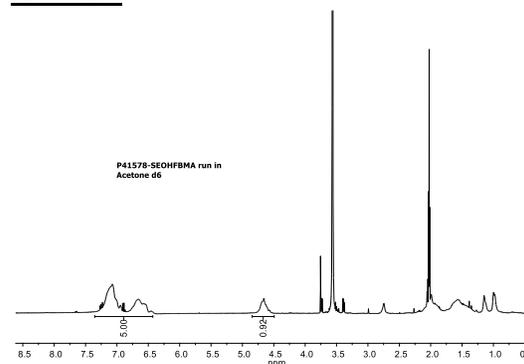
¹H NMR spectrum of SEO-terminated with RAFT in CdCl₃:



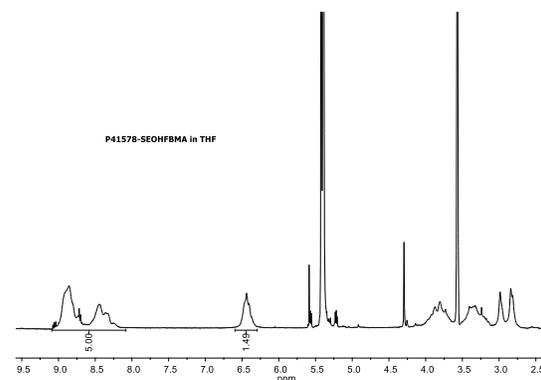
¹H NMR analysis of the triblock copolymer:

¹H NMR analysis in CdCl₃, D₆ Acetone gives ambiguity compositions of HFBMA moiety. Following are the results in CdCl₃ or acetone. THF was found the good solvent for the determination of HFBMA composition in triblock copolymer.

¹H NMR spectrum of the SEOHFBMA Sample in d₆-Acetone:



¹H NMR spectrum of the SEOHFBMA Sample in d₈-THF

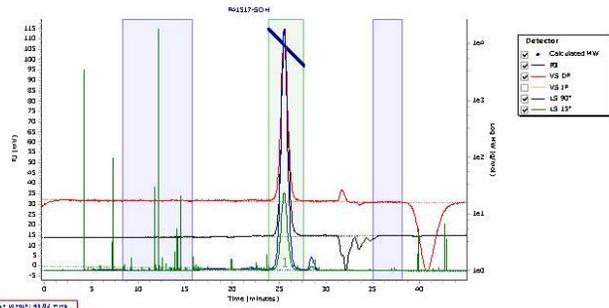


SEC elugram of the SOH Sample:

Agilent GPC/SEC Software

P41517-SOH

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 | 9199 | 9030 | 9228 | 9427 | 9630 | 9379 | 1.022 |

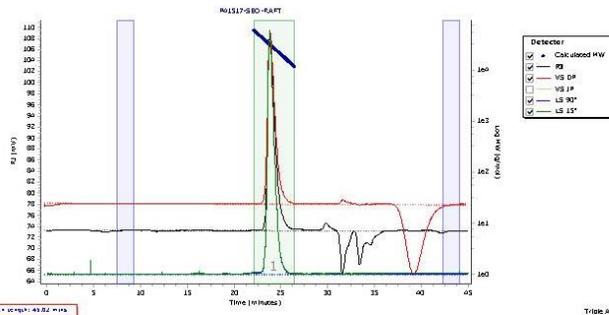
Processing Parameters

SEC elugram of SEO-terminated with RAFT:

Agilent GPC/SEC Software

P41517-SEO-RAFT

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 | 32039 | 28324 | 29294 | 30125 | 30874 | 29833 | 1.034 |

GPC of the final polymer shows elution counts retarded in comparison to SEO RAFT diblock copolymer. From GPC only molecular weight distribution calculated and compositions from its HNMR analysis.

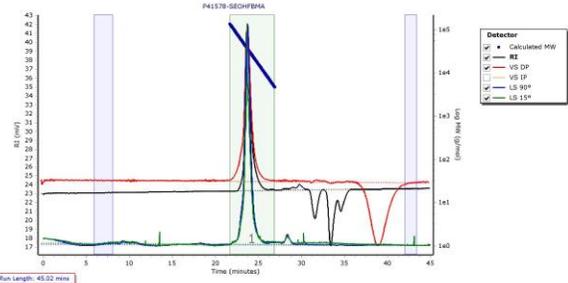
Furthermore, Homo poly 2,2,3,3,4,4-Heptafluorobutyl methacrylate polymer shows negative dn/dc in THF.

SEC elugram of the Sample:

Agilent GPC/SEC Software

P41578-SEOHFBMA

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 | 38398 | 30544 | 33870 | 36337 | 38512 | 36206 | 1.109 |

Solubility in Different solvents

| | |
|---------|-----------------------------|
| CHCL3 | In soluble |
| THF | Clear at 35 oC |
| Acetone | Soluble at Room temperature |
| DMF | In soluble |