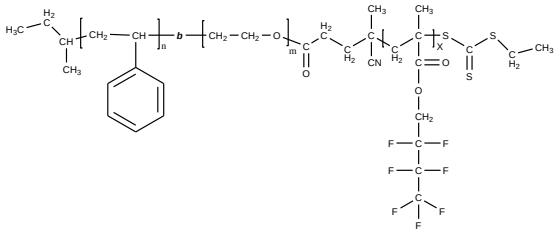
Sample Name: **Poly(styrene-b-ethylene oxide-b-Hepta flurobutylmethacrylate)**

Sample #: **P41517A-SEOHFBMA**

**Structure:**

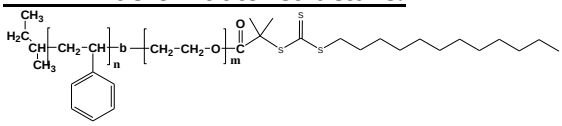


**Composition:**

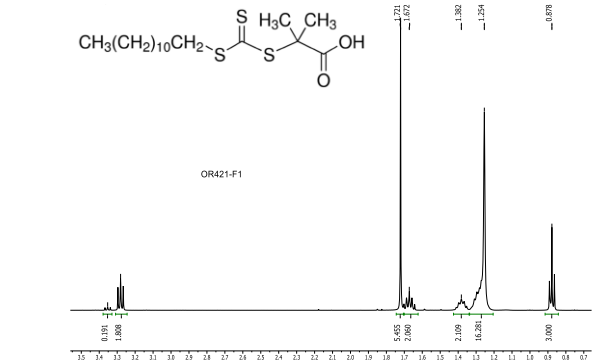
| Mn x $10^3$<br>S-b-EO-b-HFBMA | PDI |
|---|---|
| 9.0-b-19.5-b-6.0<br>Composition by HNMR | 1.15 |

**Synthesis Procedure:**
The polymer was prepared by combination of anionic and RAFT polymerization process.

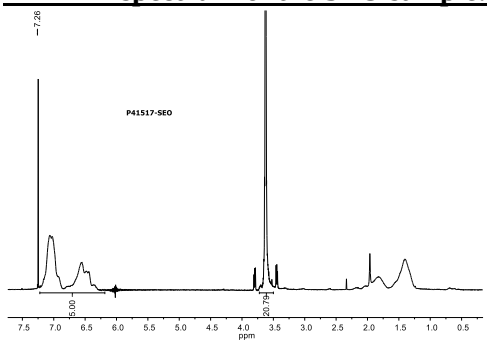
**RAFT macroinitiator structure:**



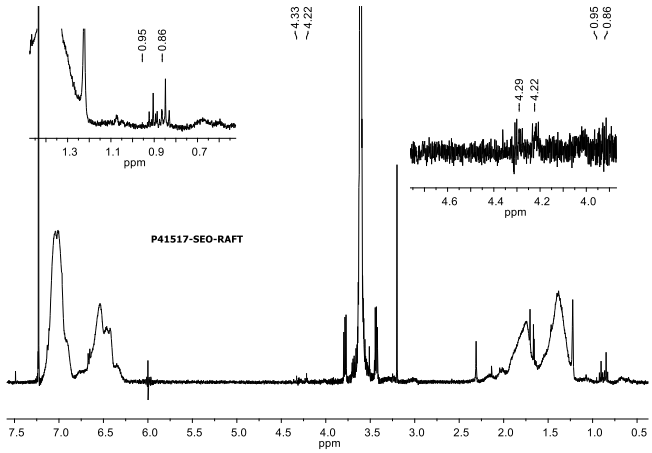
**$^1$H NMR spectrum of the RAFT macroinitiator:**



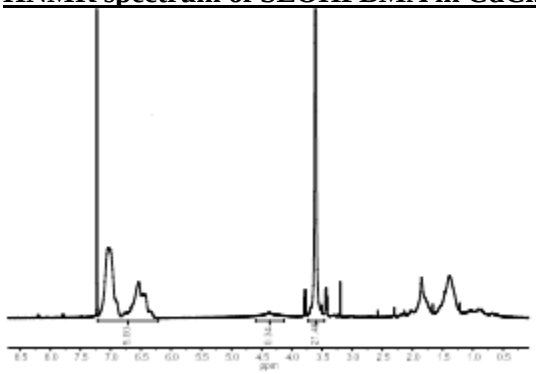

**$^1$H NMR spectrum of the SEO sample:**



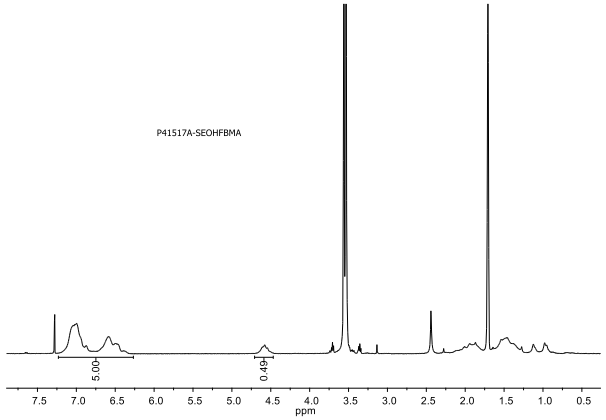

**HNMR spectrum of SEO-terminated with RAFT:**




**HNMR spectrum of SEOHFBMA in CdCl3:**



**HNMR spectrum of SEOHFBMA in D8-THF:**



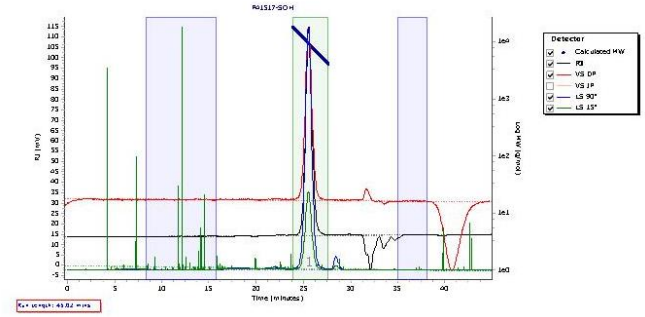

**HNMR analysis of the triblock copolymer:**
HNMR analysis in CdCl3, D6 Acetone gives ambiguity compositions of HFBMA moiety. Following are the results in CdCl3. THF was found the good solvent for the determination of HFBMA composition in triblock copolymer.

## SEC profile 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 | 9229 | 9427 | 9630 | 9379 | 1.022 |

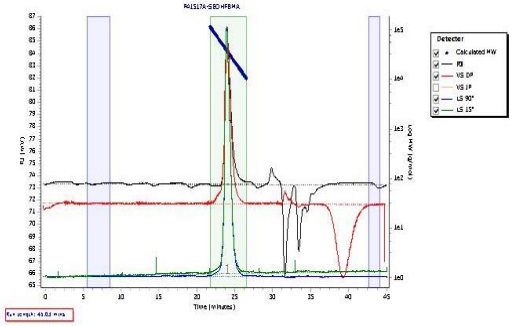
Processing Parameters

## SEC elugram of the Sample:

Agilent GPC/SEC Software

P41517A-SEOHFBMA

Chromatogram Plot



Molecular Weight Averages

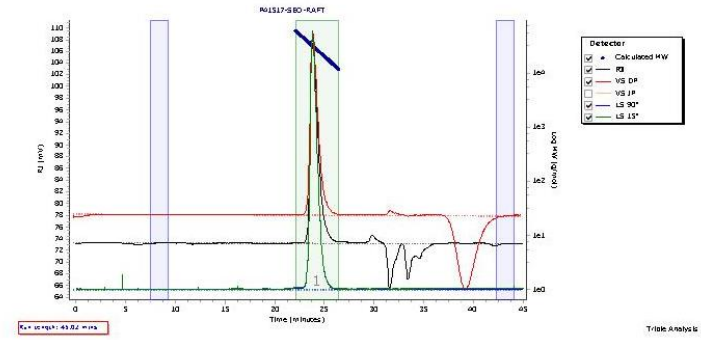
| Peak | Mp (g/mol) | Mn (g/mol) | Mw (g/mol) | Mz (g/mol) | Mz+1 (g/mol) | Mv (g/mol) | PD |
|---|---|---|---|---|---|---|---|
| Peak 1 | 37538 | 31378 | 33569 | 35221 | 36532 | 34894 | 1.07 |

## SEC elugram of the SEO-RAFT Sample:

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-Heptaflurobutyl methacrylate polymer shows negative dn/dc in THF.**