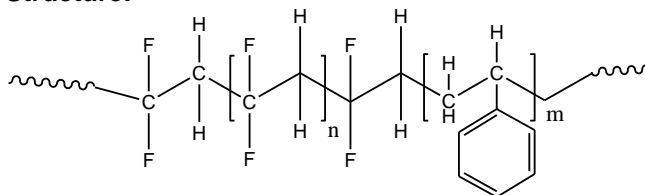


Poly (Vinylidene difluoride-b-Styrene)

**Sample # P18750-VDFS**

### Structure:



**Composition:**

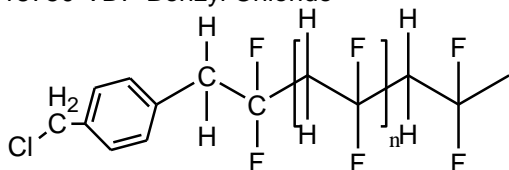
Mn x 10 <sup>3</sup>	PDI
9.0-b-8.5	1.4

### Synthesis Procedure:

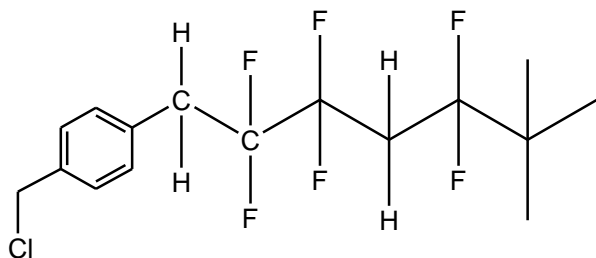
## Synthesis of

### Benzyl Chloride Terminated Vinylidene difluoride

P 18750-VDF-Benzyl Chloride

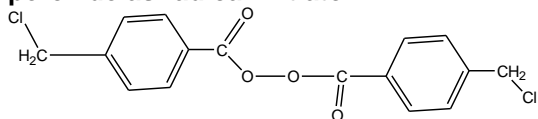


### Head to Tail arrangement



Head to Head or tail to tail

### Radical process using 4-Chloromethyl benzoyl peroxide as radical initiator



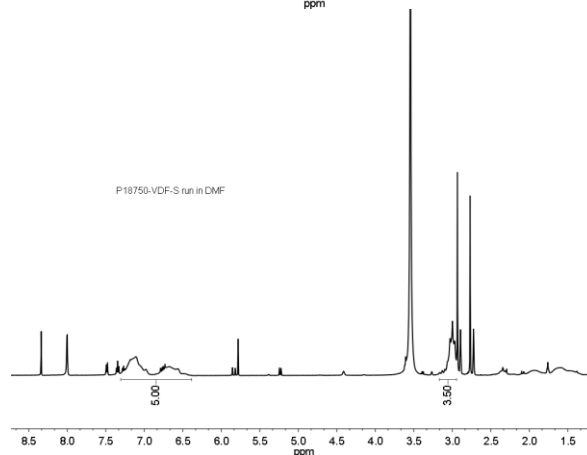
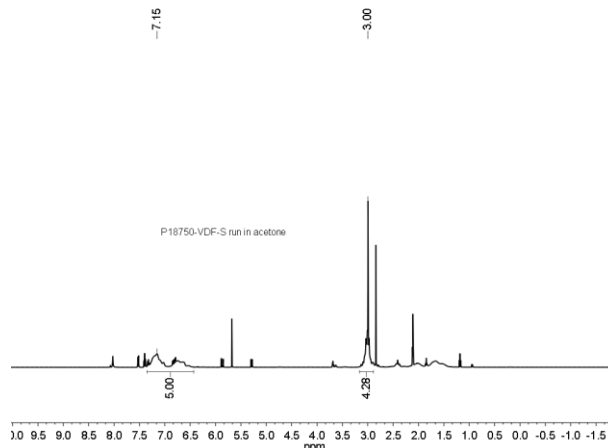
### Block copolymerization with styrene using ATRP process

### Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) in DMF and by HNMR. In DMF it gives negative response because of low  $dn/dc$ . It only provide  $M_w/M_n$  of the polymer and  $M_n$  calculated from its HNMR analysis using end group analysis. GPC of the final polymer with respect to polystyrene as reference material gives much higher values then determine by HNMR analysis. We only consider  $M_w/M_n$  of the polymer using this analysis.

**Solubility:** Polymer is soluble in DMF, THF.

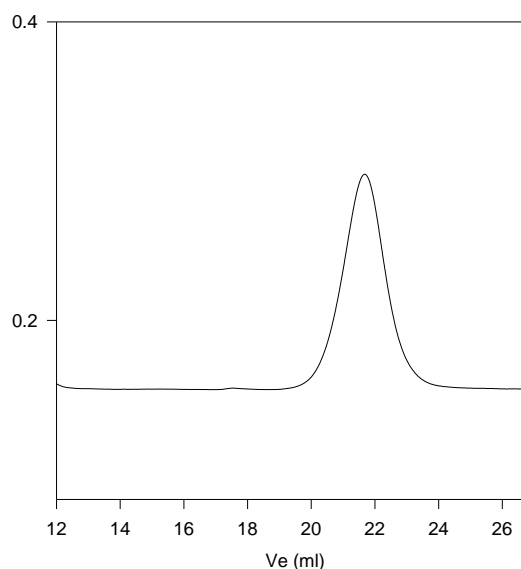
**<sup>1</sup>H NMR:**



VDF-b-S Run in DMF values are w.r.t PS reference

**SEC of sample:**

**P18750 -VDF-S**



Size exclusion chromatography result:

—— VDF-b-S  $M_n = 9,000$ -b-8,500 PI=1.4

From GPC we only indicate Mw/Mn . These values are w.r.to Polystyrene as reference material.