

## Supporting Information

### Multicomponent Isocyanide-based Synthesis of Reactive Styrenic and (Meth)acrylic Monomers and their RAFT (Co)polymerization

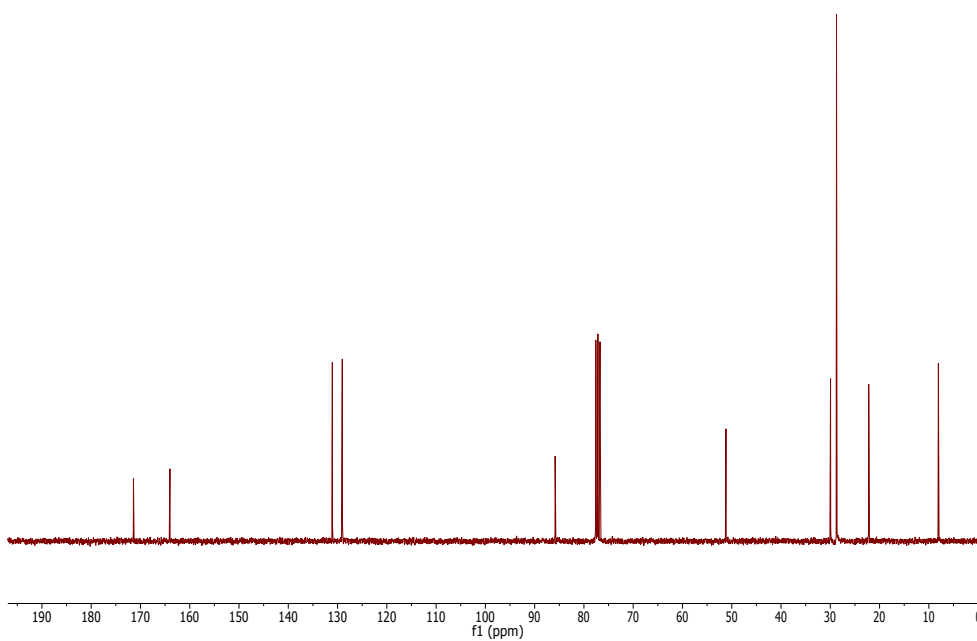
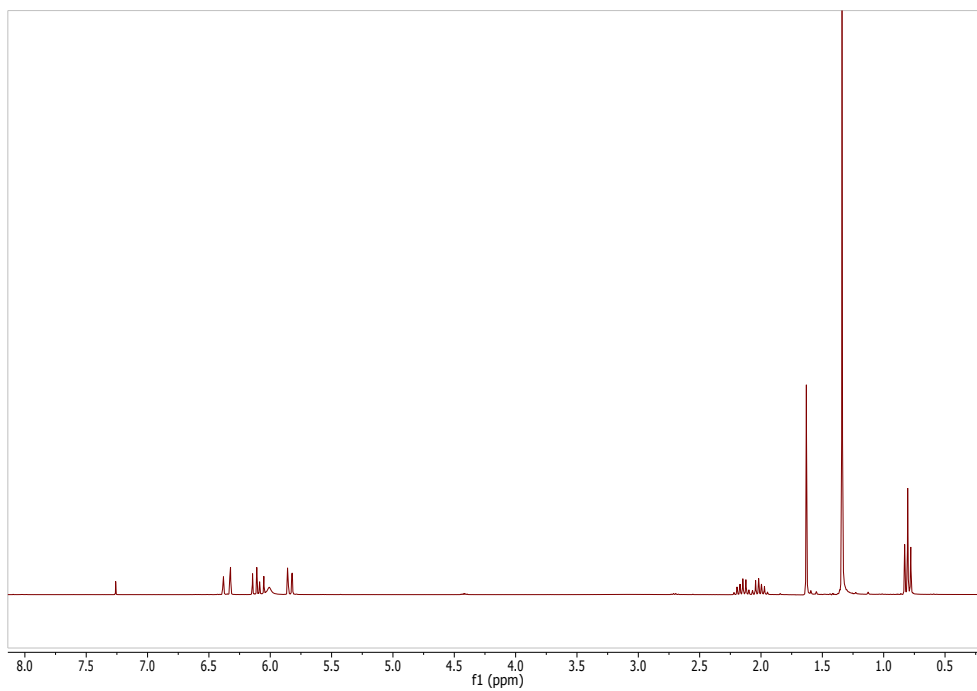
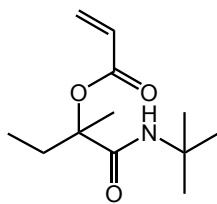
*Sonja Schmidt, Miriam Koldevitz, Janina-Miriam Noy, Peter J. Roth\**

Centre for Advanced Macromolecular Design (CAMD), School of Chemical Engineering, University of New South  
Wales, UNSW Sydney NSW 2052, Australia

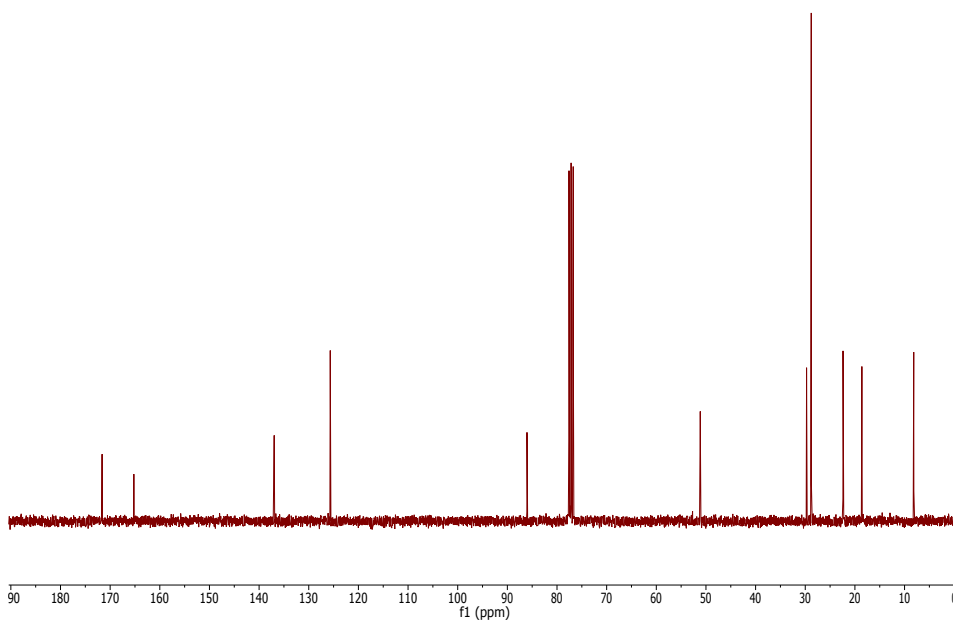
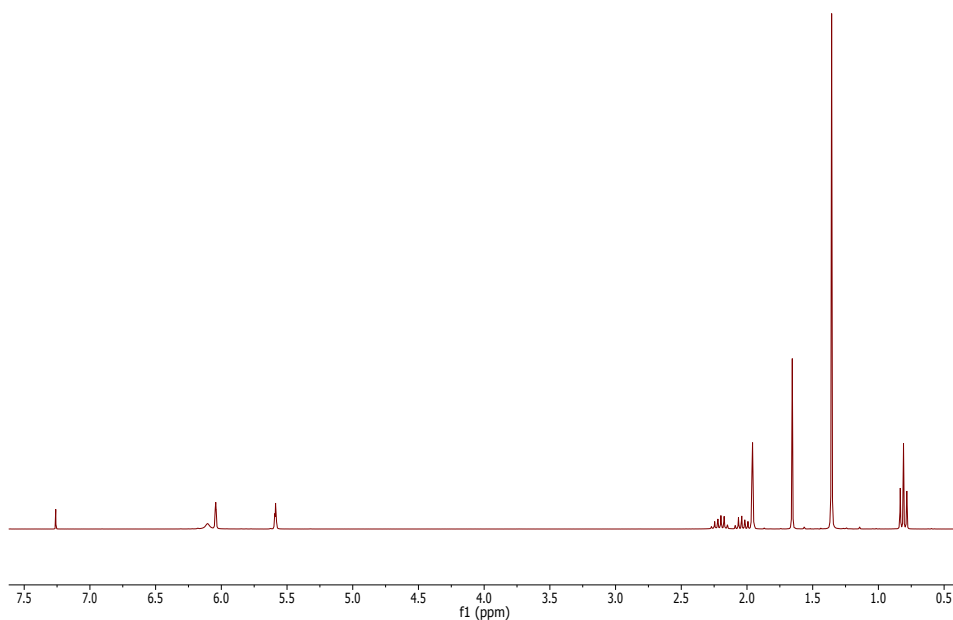
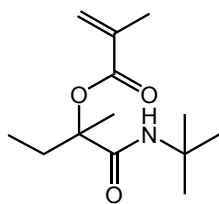
\* corresponding author, email address: [P.Roth@unsw.edu.au](mailto:P.Roth@unsw.edu.au)

# Monomer Characterization: $^1\text{H}$ , $^{13}\text{C}$ , ( $^{19}\text{F}$ ) NMR spectra

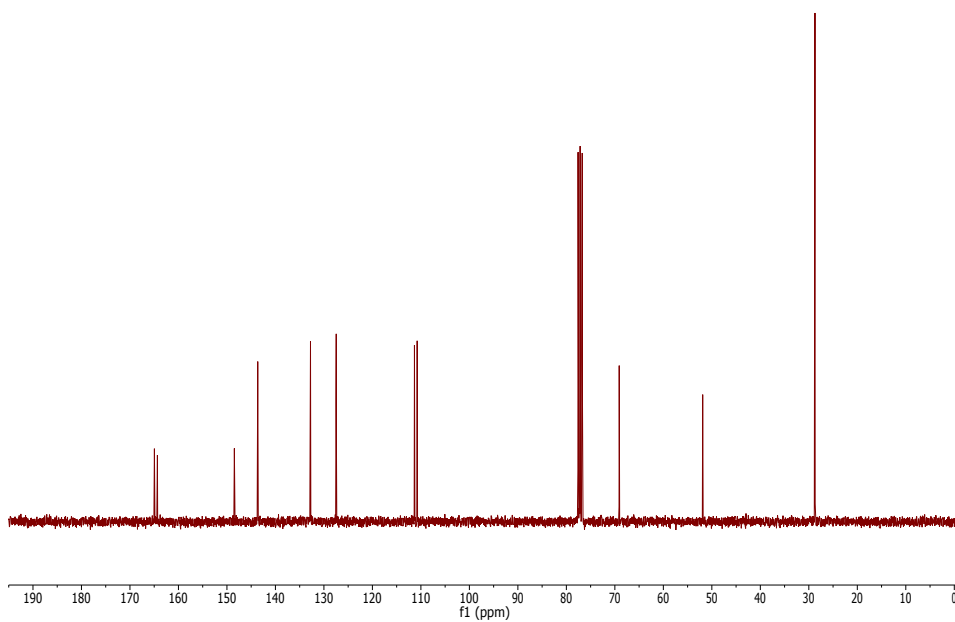
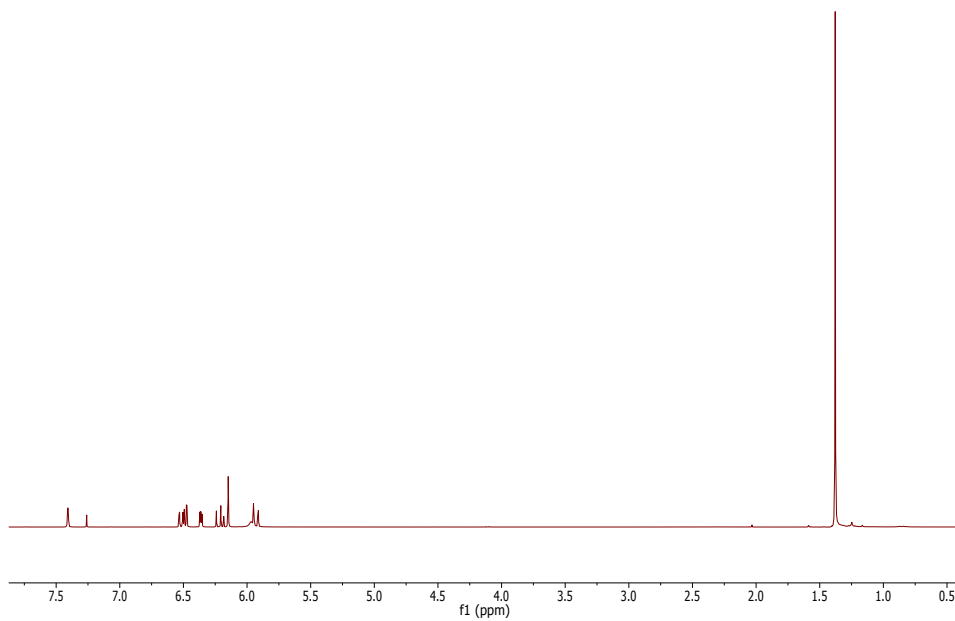
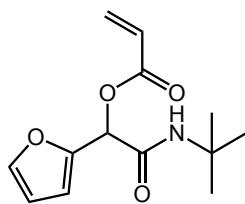
*t*Bu-A-MBu



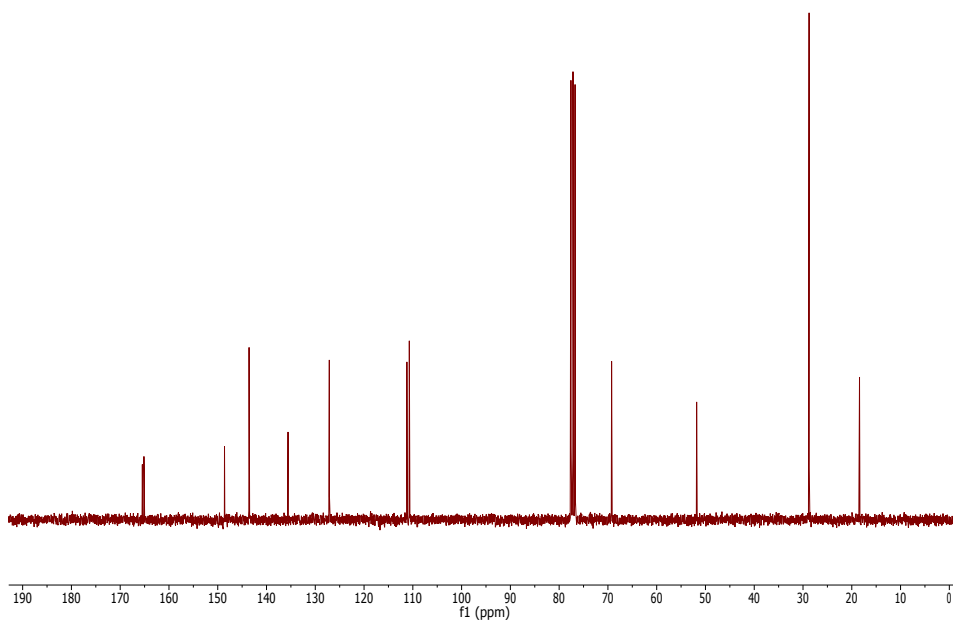
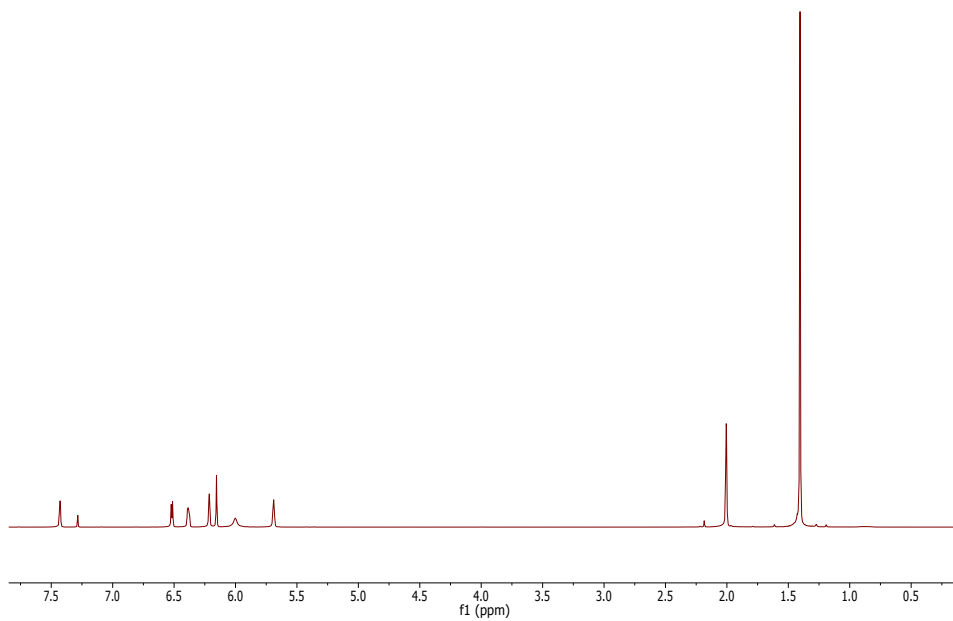
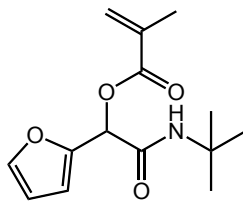
***t*Bu-MA-MBu.**



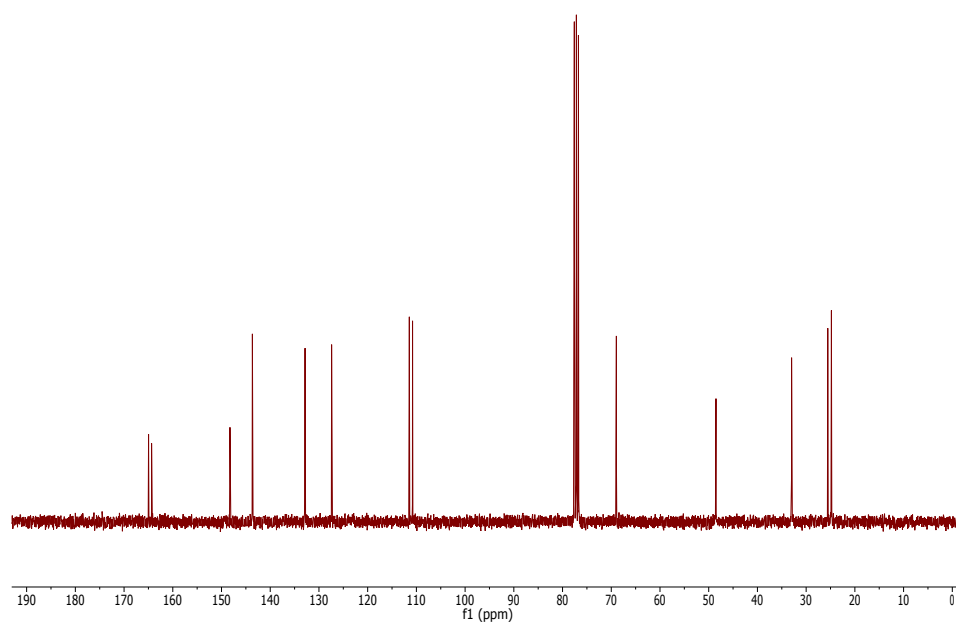
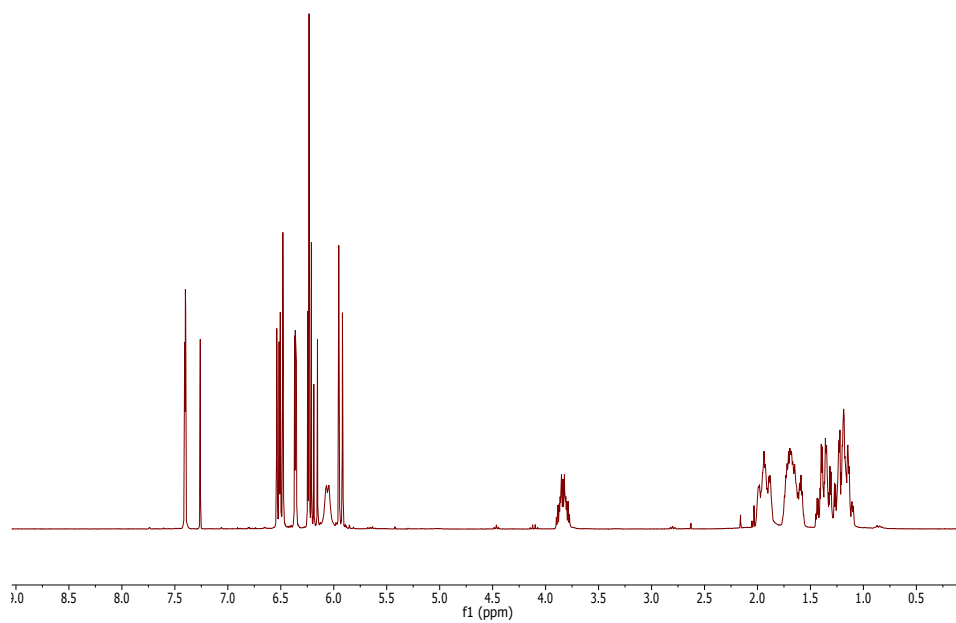
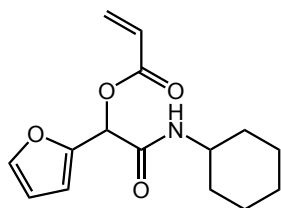
***t*Bu-A-Fur**



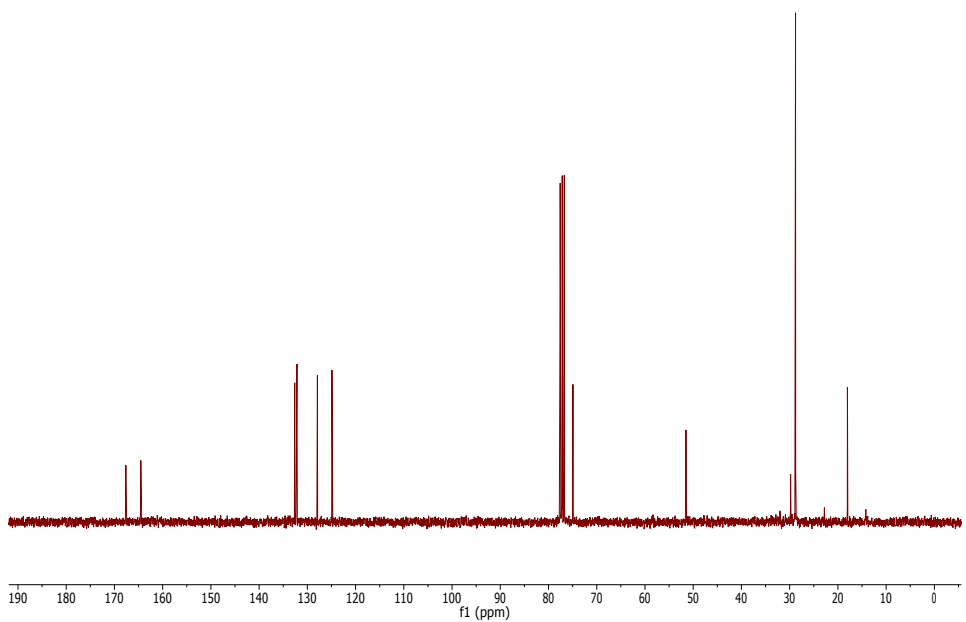
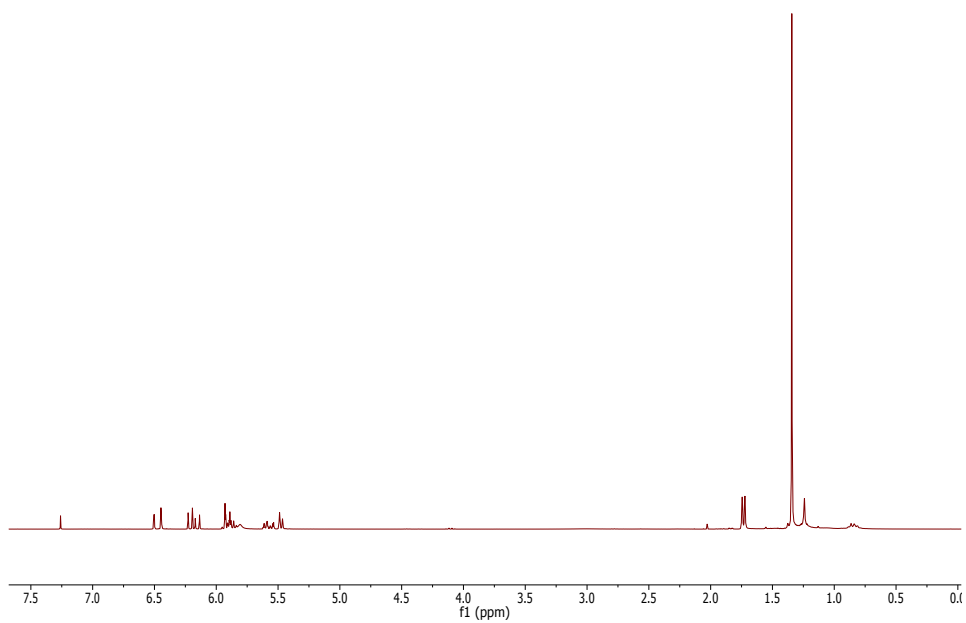
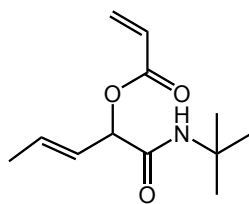
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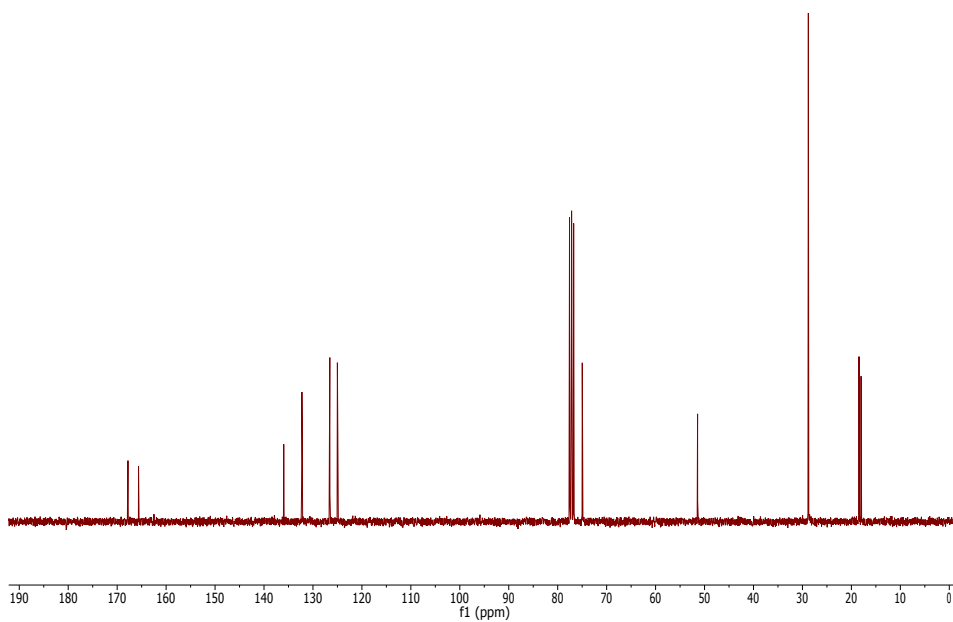
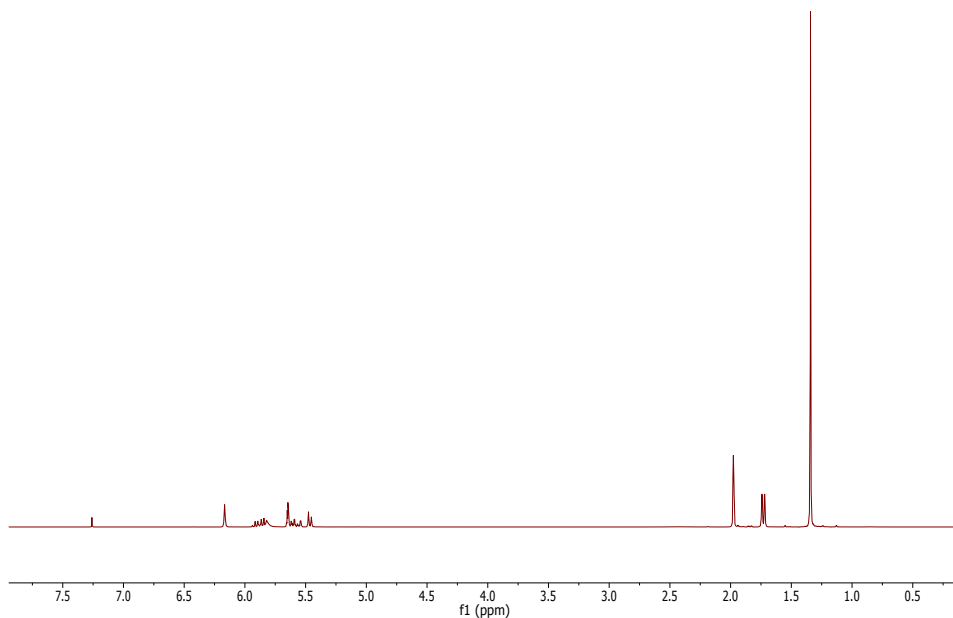
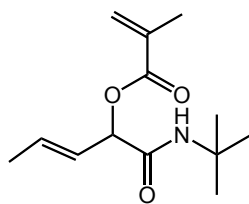
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***t*Bu-A-Pentene.**

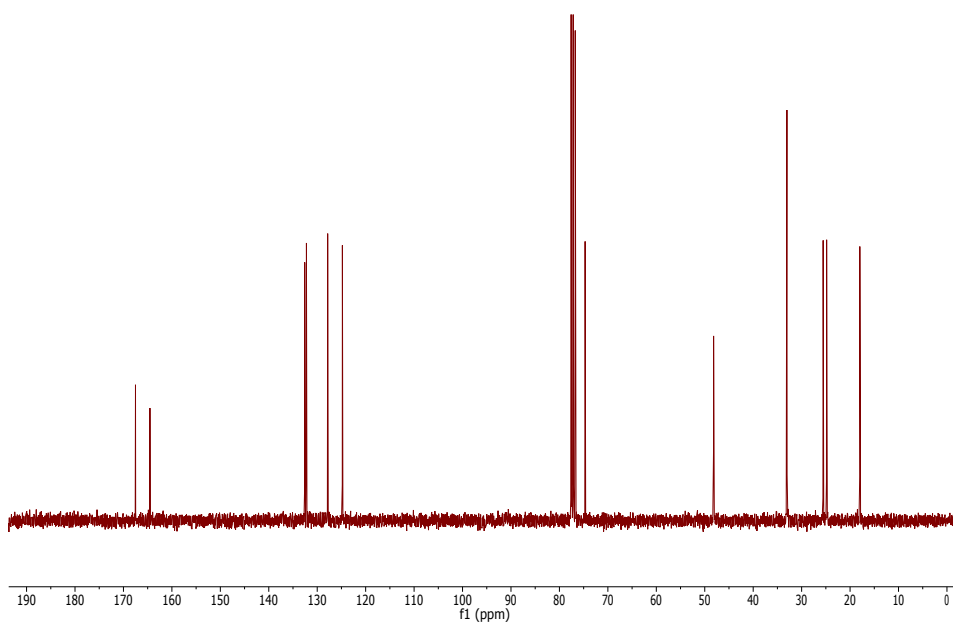
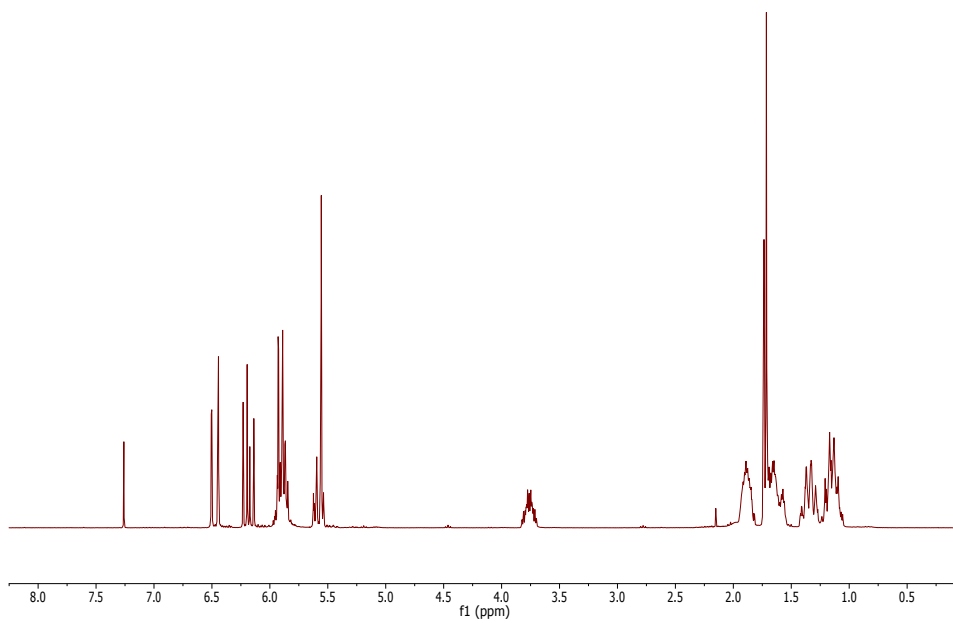
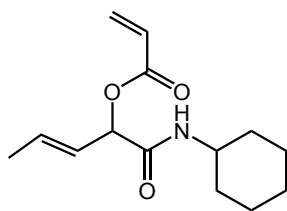


***t*Bu-MA-Pentene.**

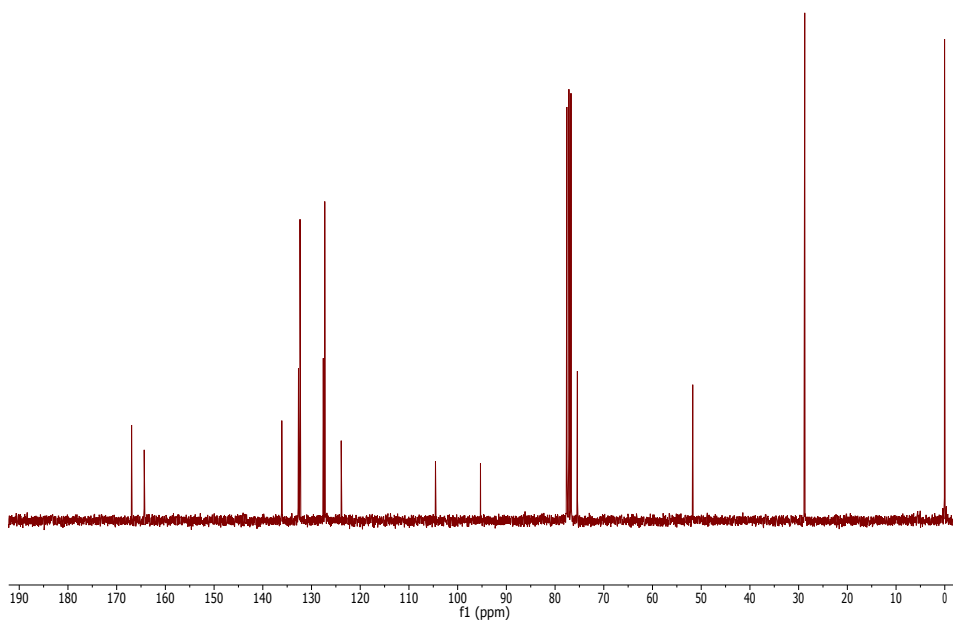
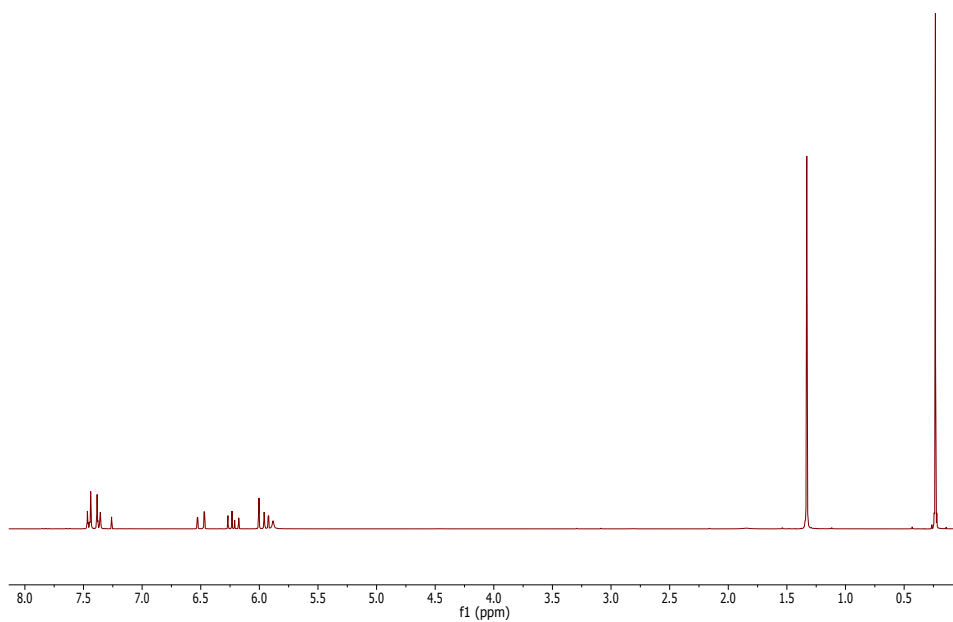
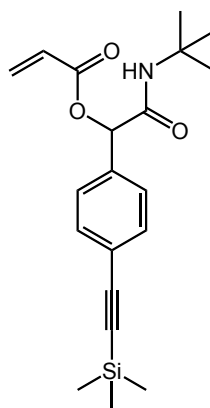




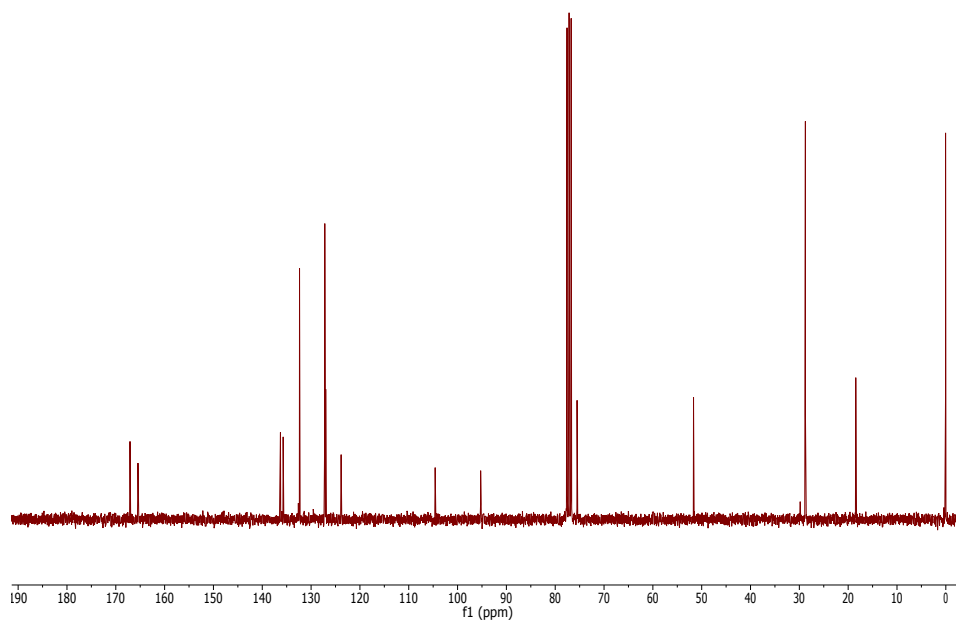
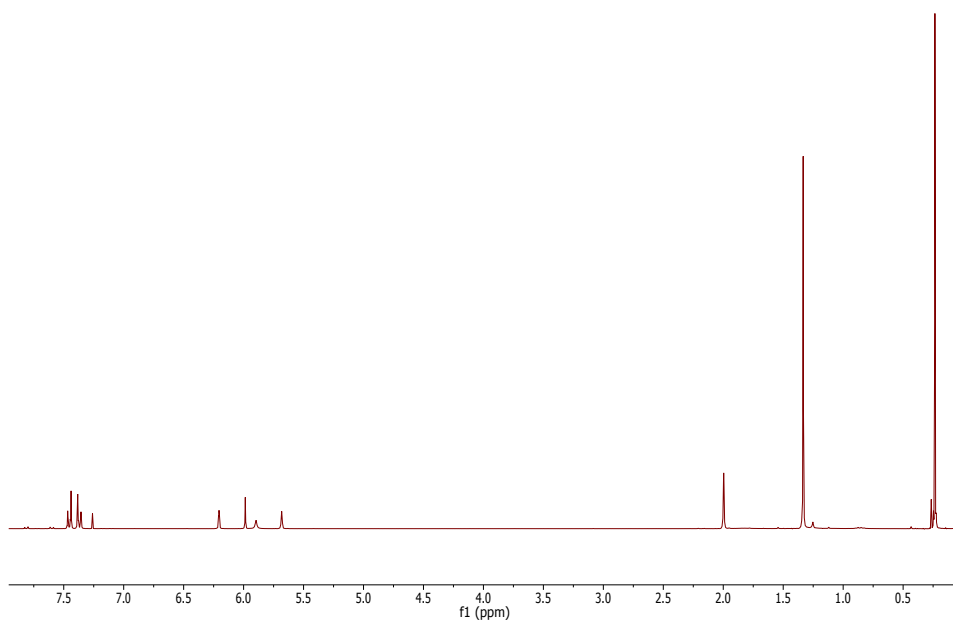
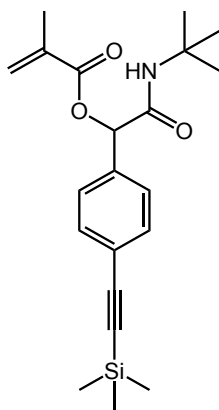
**cHex-A-Pentene.**



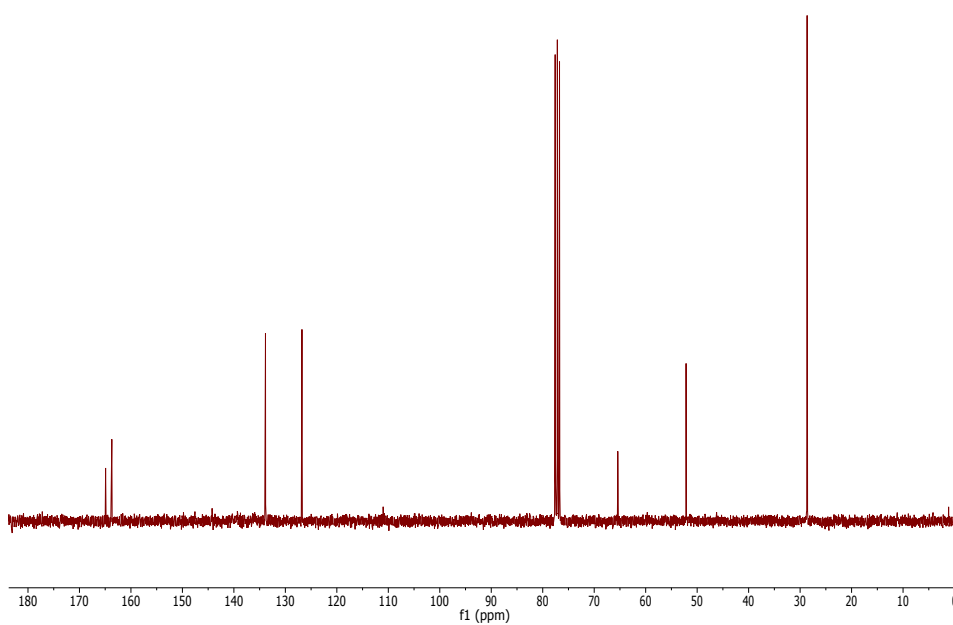
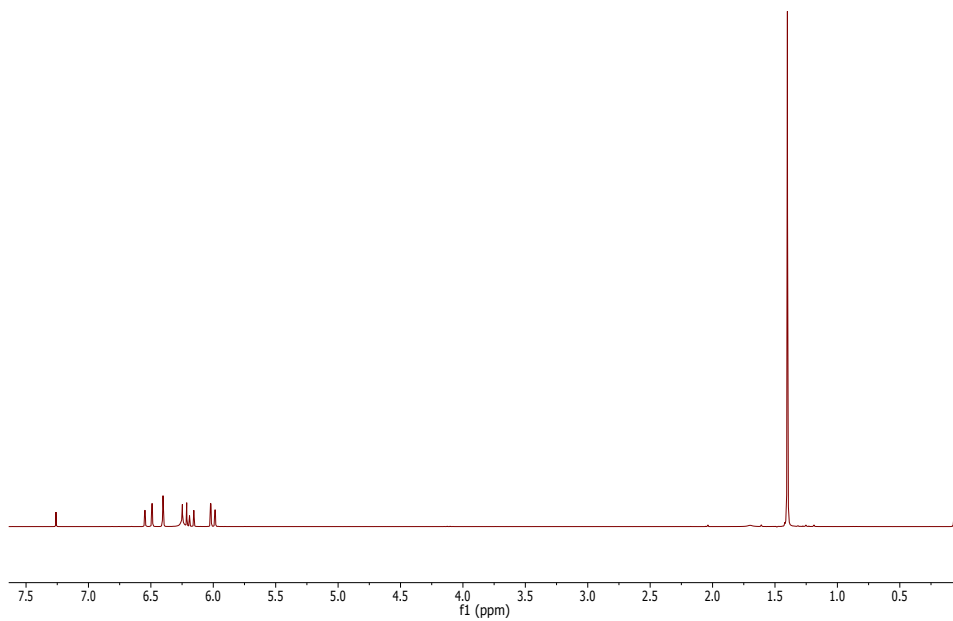
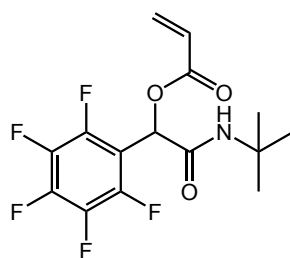
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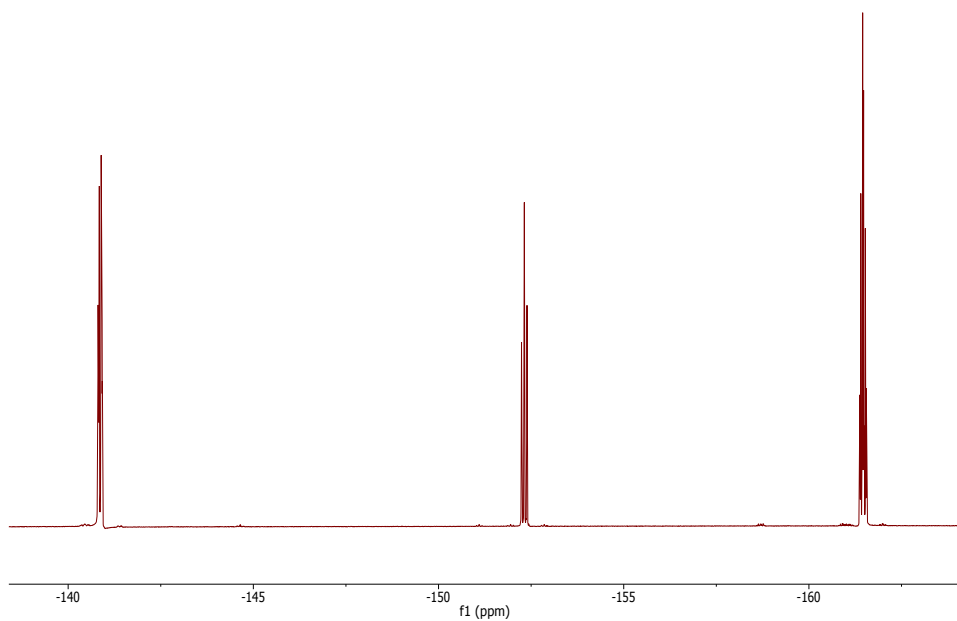


***t*Bu-MA-TMSyne.**



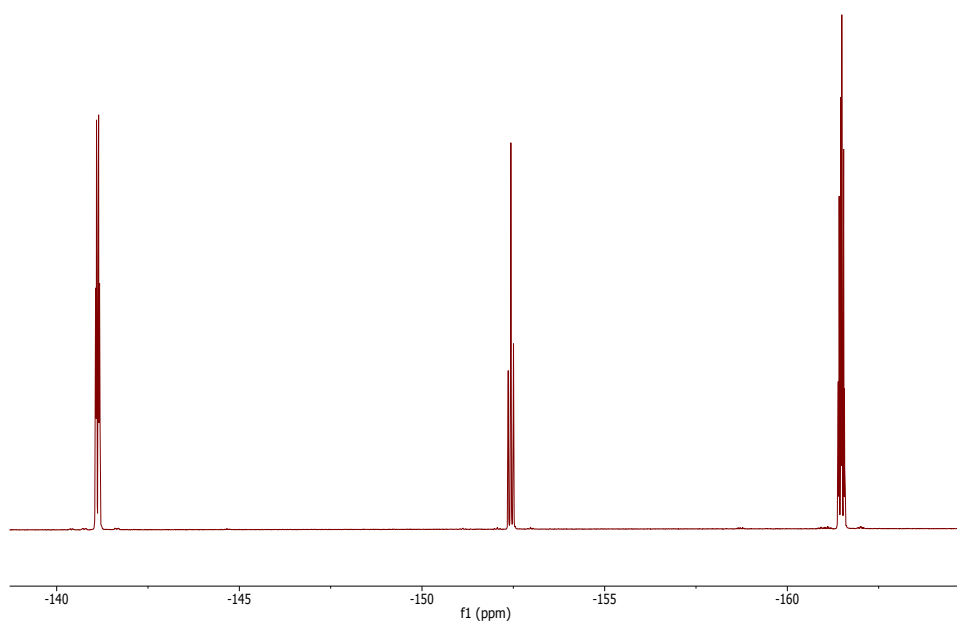
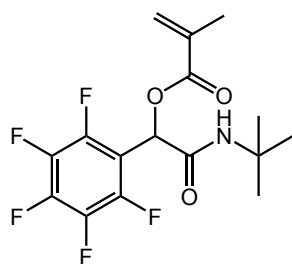
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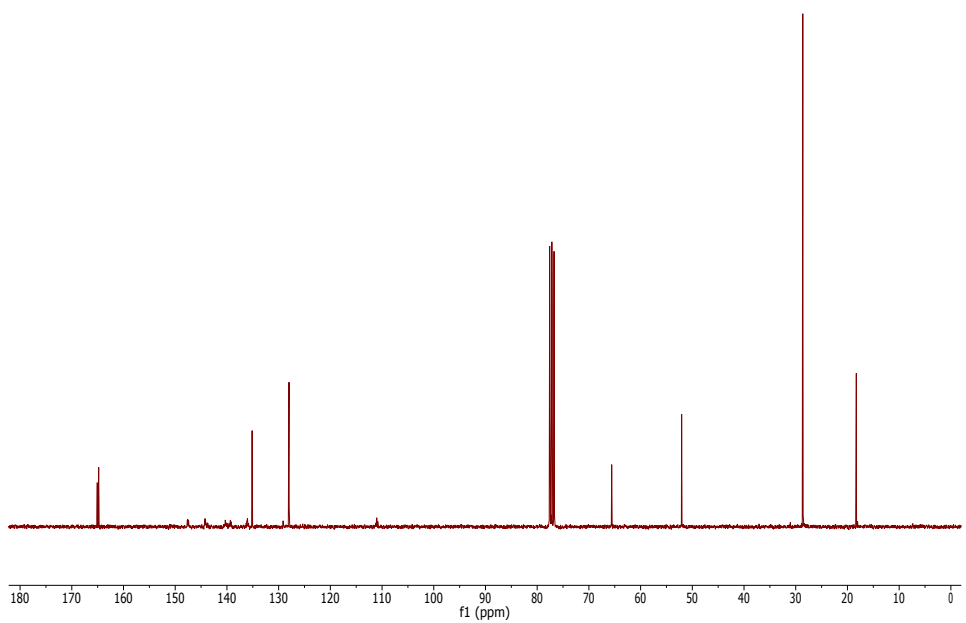
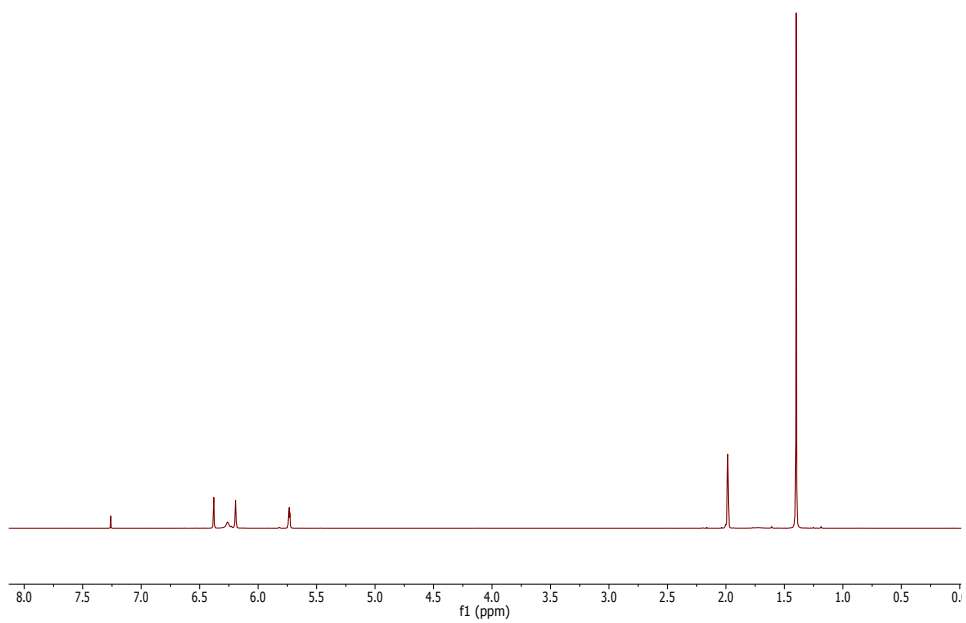


**tBu-A-PFP**  $^{19}\text{F}$  NMR

**tBu-MA-PFP.**

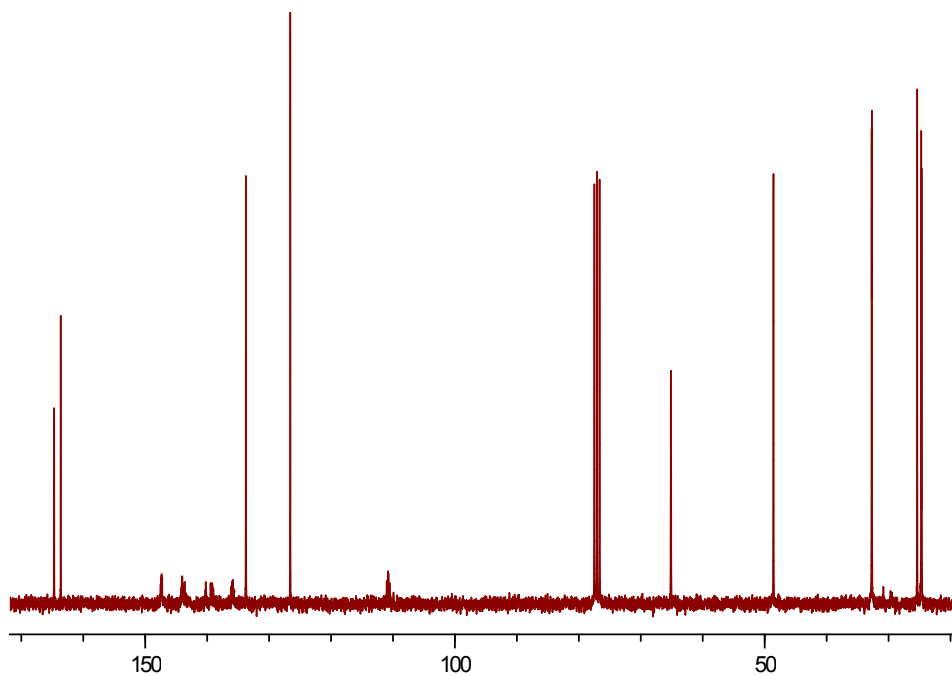
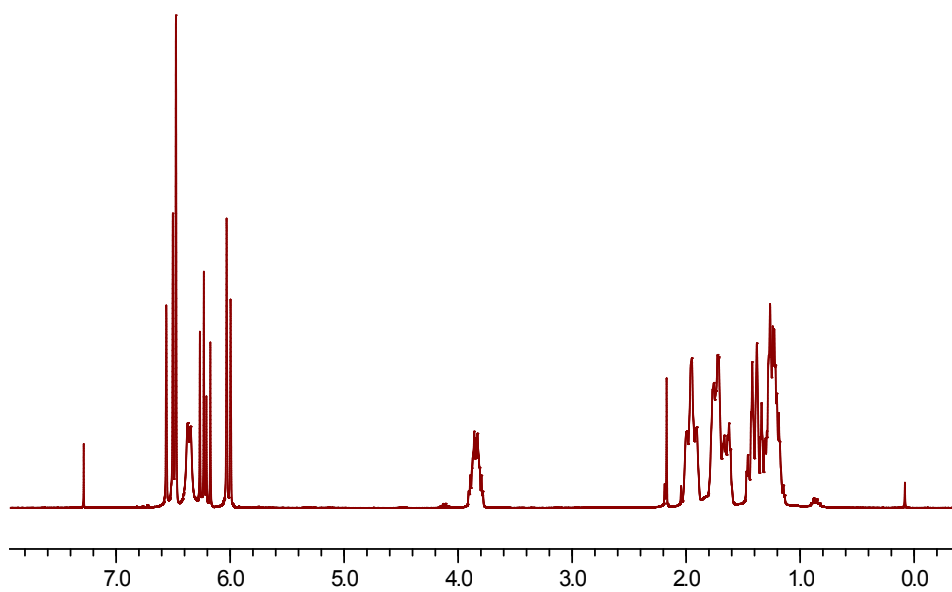
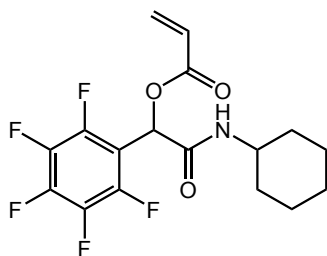


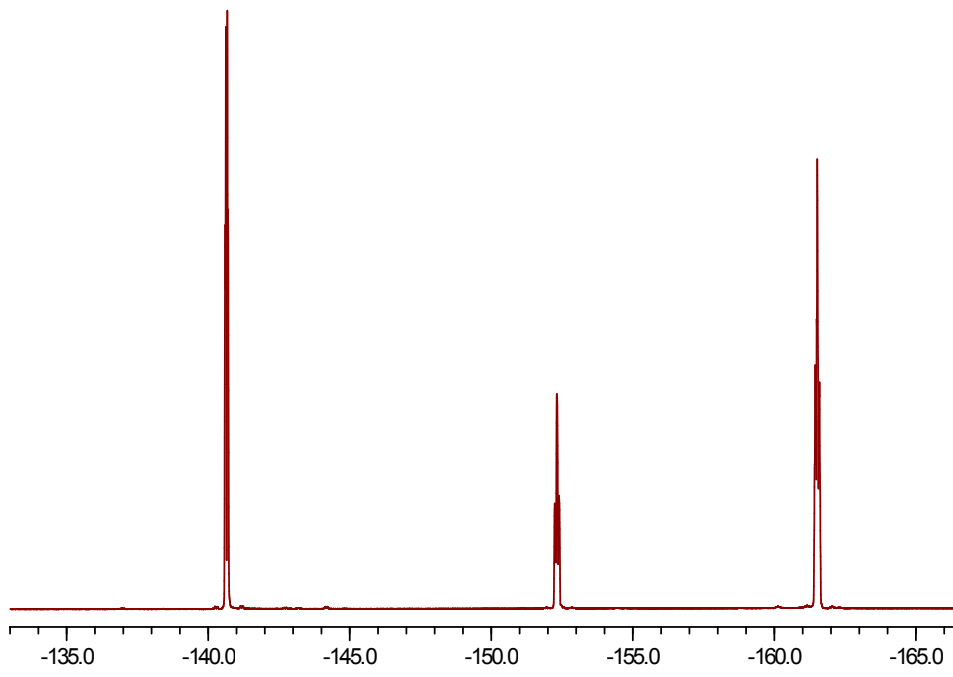
**tBu-MA-PFP**  $^{19}\text{F}$  NMR



***t*Bu-MA-PFP  $^1\text{H}$ ,  $^{13}\text{C}$  NMR**

**cHex-A-PFP.**

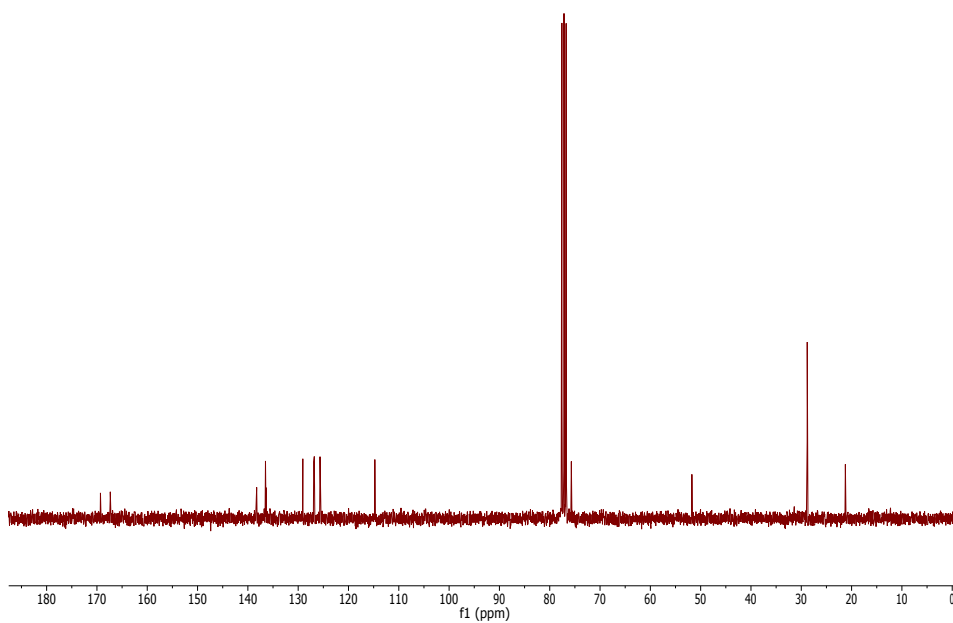
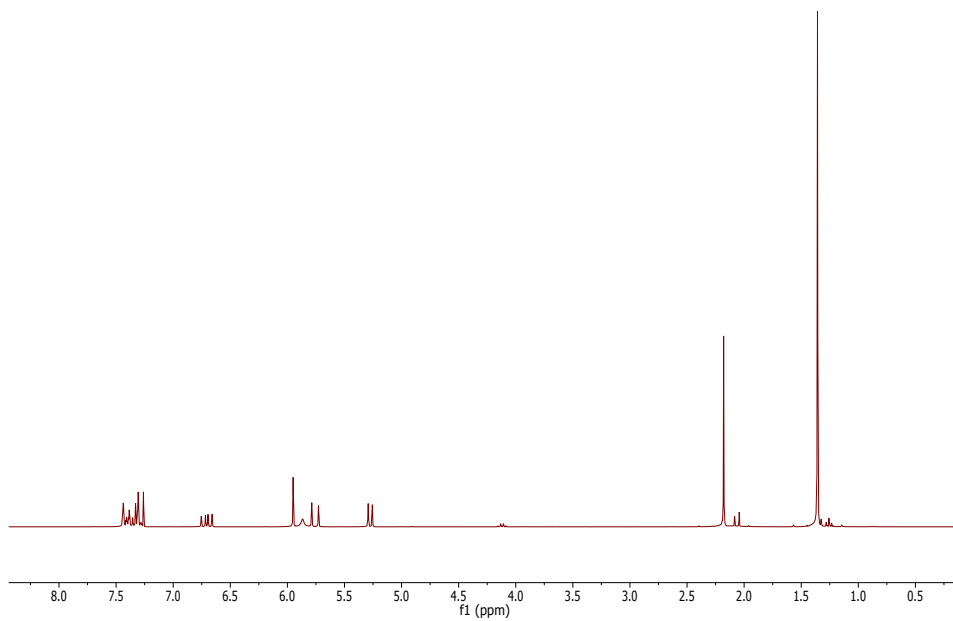
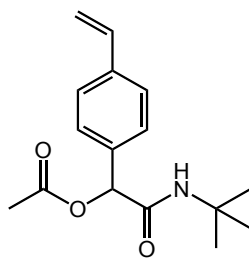




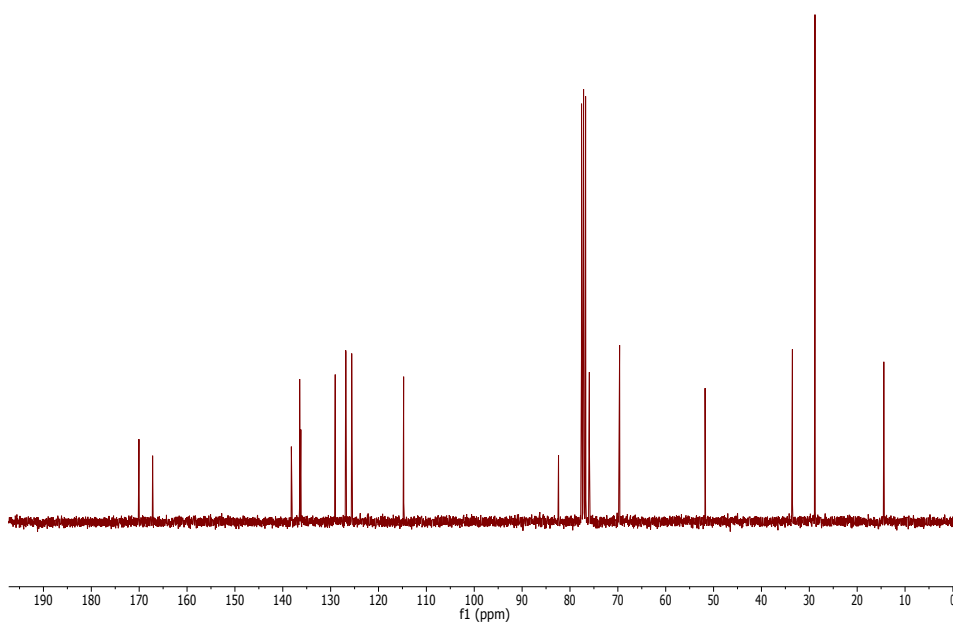
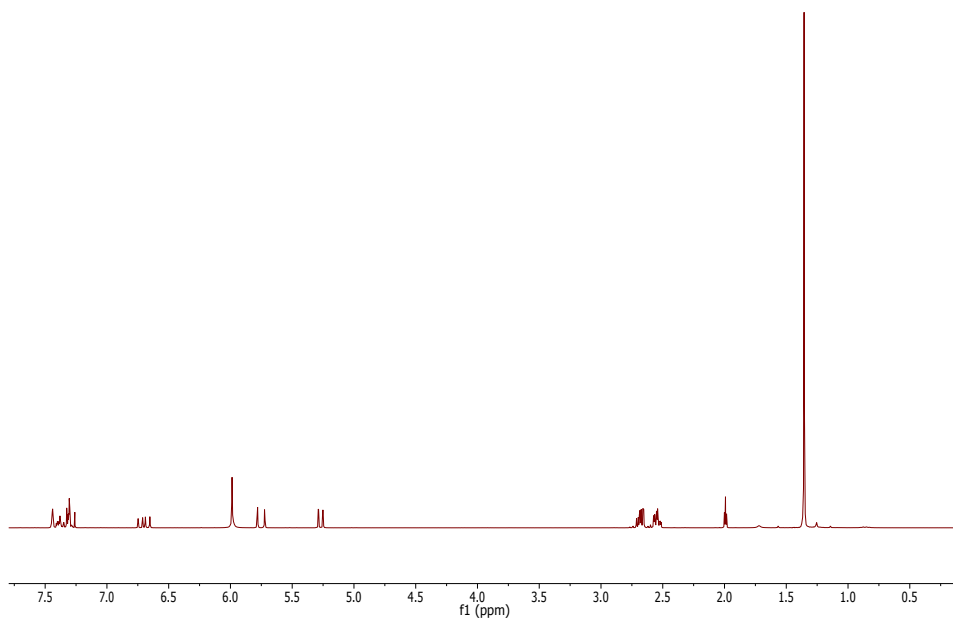
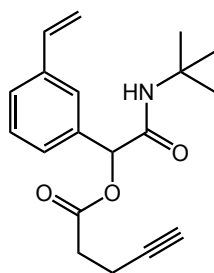
**cHex-A-PFP**  $^{19}\text{F}$  NMR



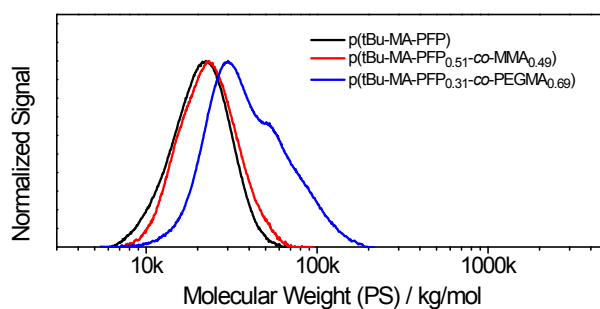
***t*Bu-Ac-Sty.**



***t*Bu-Pentyne-Sty.**

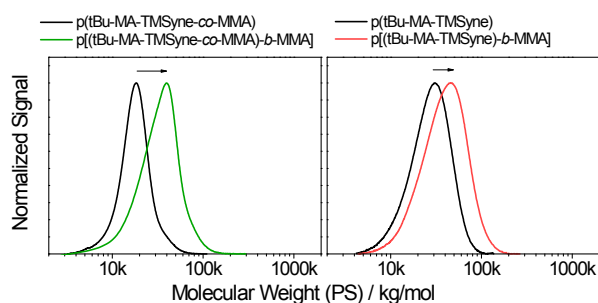


## Polymer Synthesis: more SEC measurements



SEC traces of reactive homo- and copolymers

## Chain Extension Experiments



SEC traces of reactive homo- (right) and copolymer (left) and after chain extension with a block of methyl methacrylate

## Summary of Polymer Solubility

Polymer	H <sub>2</sub> O	MeOH	EtOH	MeCN	DMSO	DMF	DMAc	THF	EtOAc	CHCl <sub>3</sub>	PhOMe	Et <sub>2</sub> O	Hex
p( <i>t</i> Bu-MA-PFP <sub>0.51</sub> - <i>co</i> -MMA <sub>0.49</sub> )	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-Ac-Sty)	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-Ac-Sty <sub>0.56</sub> - <i>co</i> -Sty <sub>0.44</sub> )	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-MA-Fur)	i	s	–	s	s	s	s	–	–	s	s	i	i
p( <i>t</i> Bu-MA-TMSyne)	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-MA-PFP)	i	–	s	s	s	s	s	–	–	s	s	i	i
p( <i>t</i> Bu-MA-Pentene <sub>0.37</sub> - <i>co</i> -MMA <sub>0.63</sub> )	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-MA-TMSyne <sub>0.50</sub> - <i>co</i> -MMA <sub>0.50</sub> )	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-MA-PFP <sub>0.69</sub> - <i>co</i> - <i>t</i> Bu-MA-Fur <sub>0.31</sub> )	i	s	s	s	s	s	s	s	s	s	s	i	i
p(cHex-A-PFP)	i	s	s	s	s	s	s	s	s	s	s	i	i
p( <i>t</i> Bu-MA-PFP <sub>0.31</sub> - <i>co</i> -PEGMA <sub>0.69</sub> )	L	–	–	s	s	s	s	–	–	s	s	i	i
p( <i>t</i> Bu-MA-Pentene <sub>0.34</sub> - <i>co</i> -PEGMA <sub>0.66</sub> )	L	–	–	s	s	s	s	–	–	s	s	i	i

s = soluble

i = insoluble

– = not determined

L = lower critical solution temperature behaviour