Supporting information for

From Glycidyl Carbonate to Hydroxyurethane Side-groups in Alternated Fluorinated Copolymers

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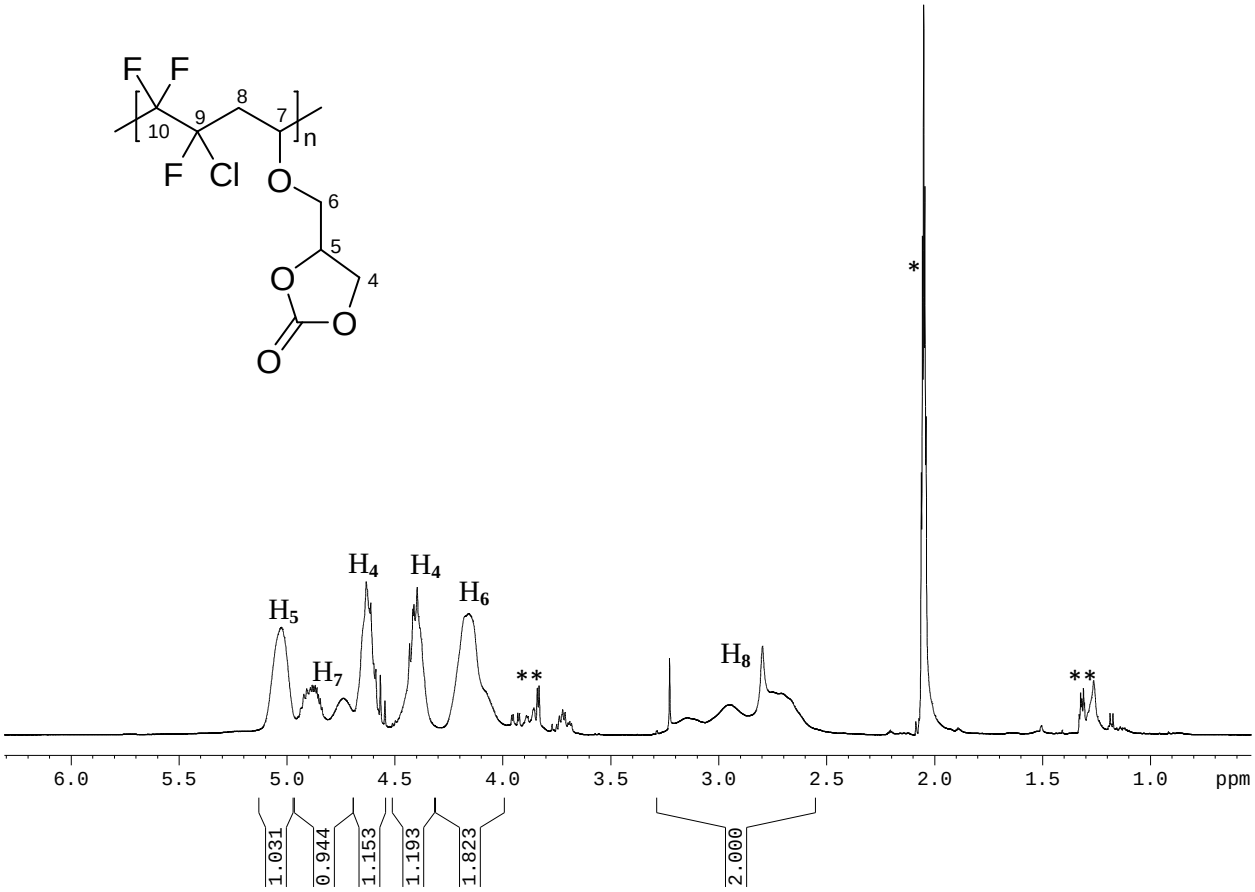

Figure S1: ^{1}H NMR spectrum (400 MHz, acetone-d_6, 298 K) of a poly[(CTFE-*alt*-GCVE) (**P1**) copolymer; signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

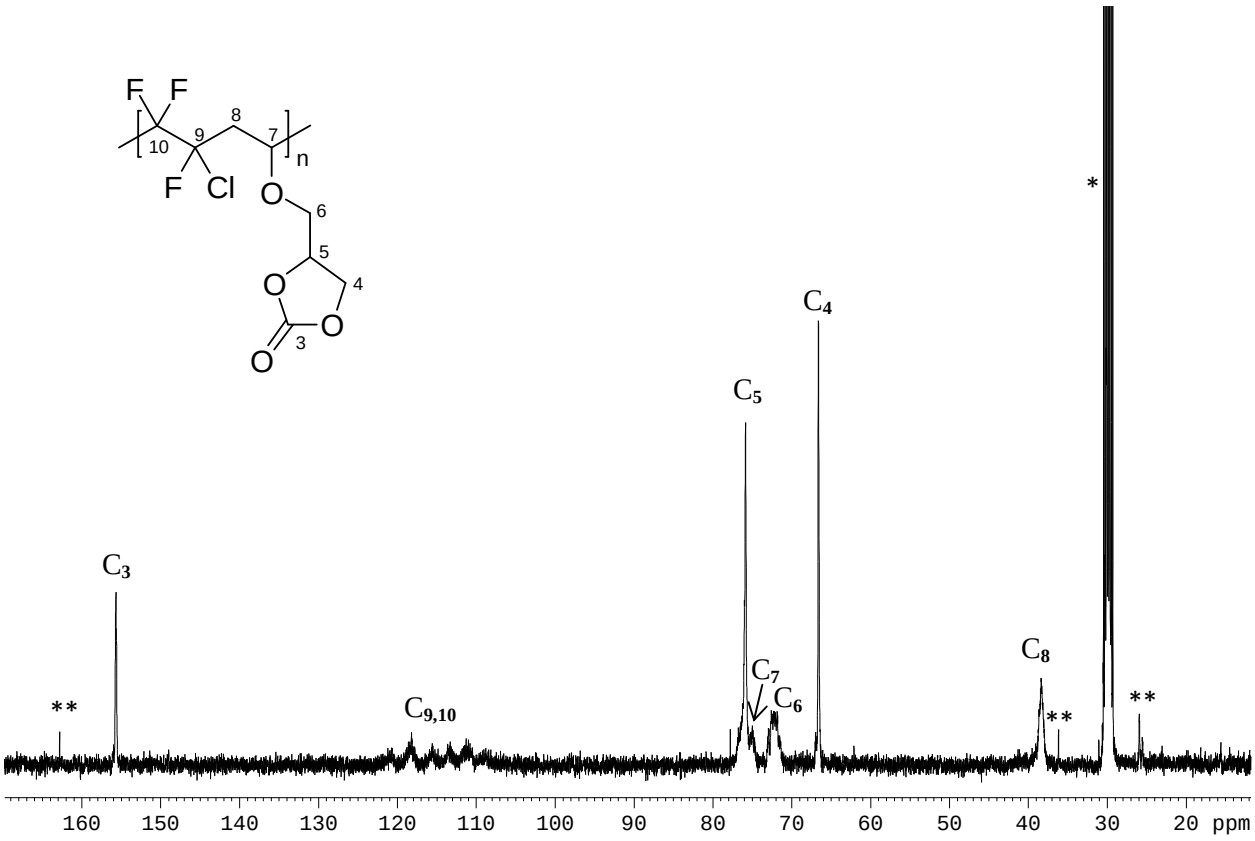

Figure S2: $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, acetone-d_6, 298 K) of a poly[(CTFE-*alt*-GCVE) (**P1**) copolymer; signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

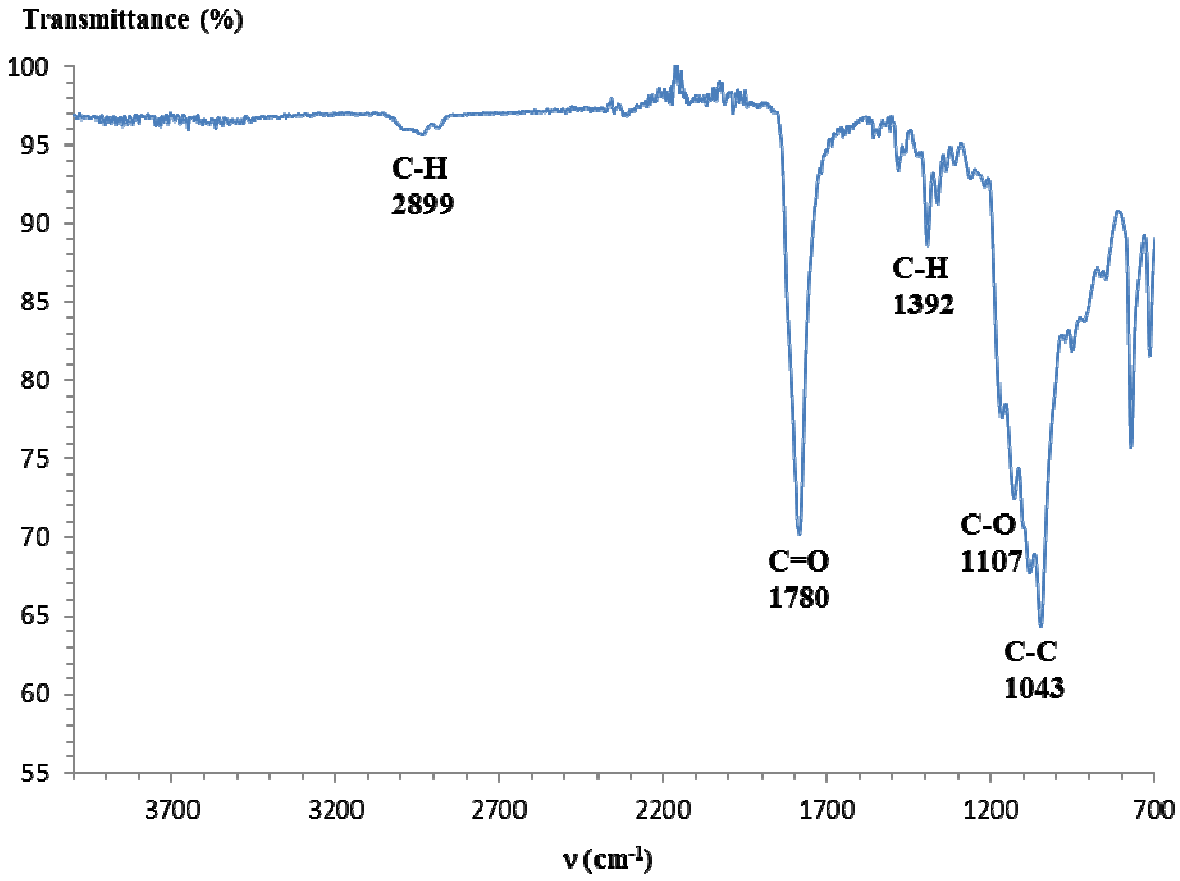

Figure S3: ATR-FTIR spectrum of a poly[(CTFE-*alt*-GCVE) (**P1**) copolymer.

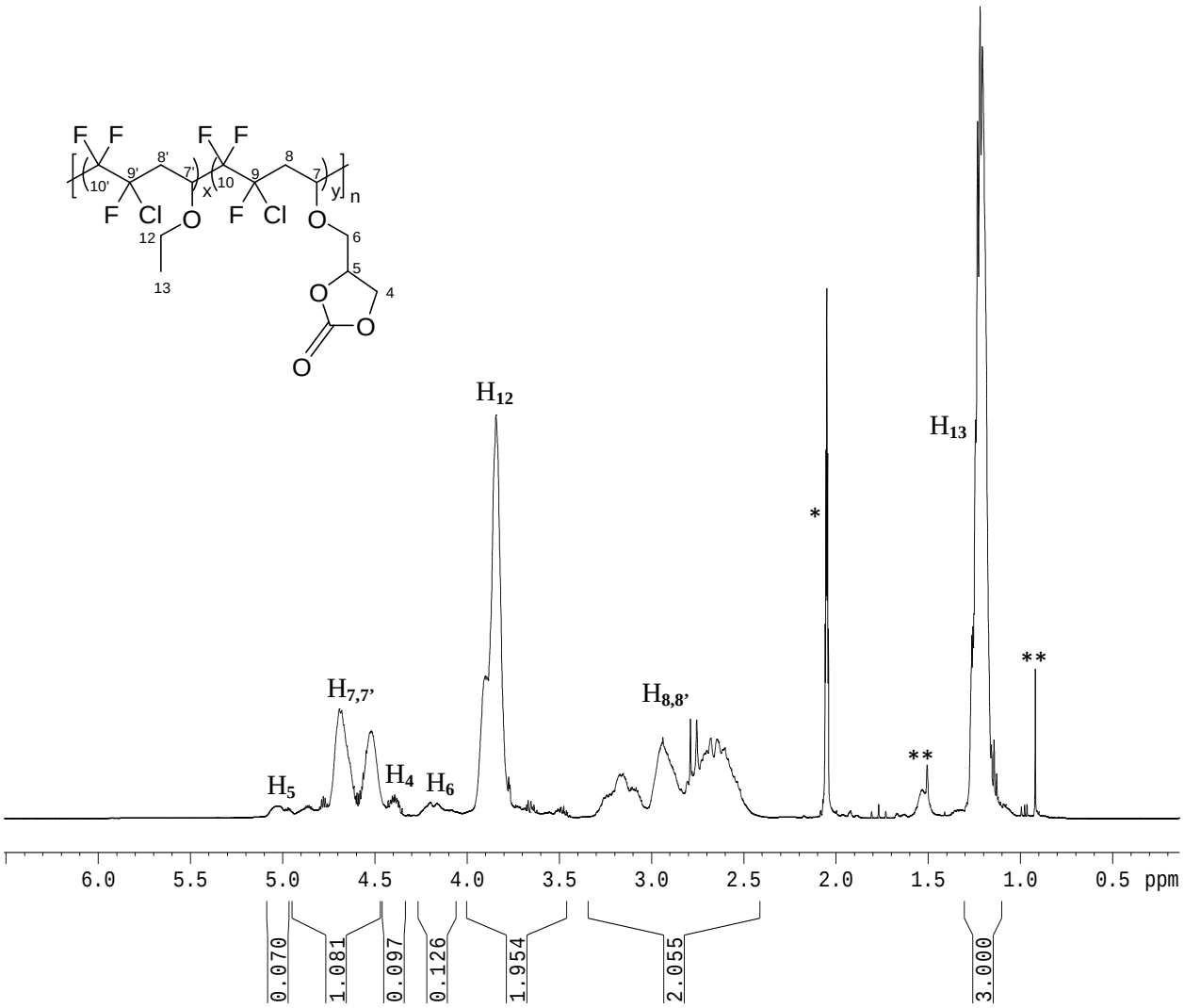

Figure S4: ^{1}H NMR spectrum (400 MHz, acetone-d_6, 298 K) of a poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer; high-field signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

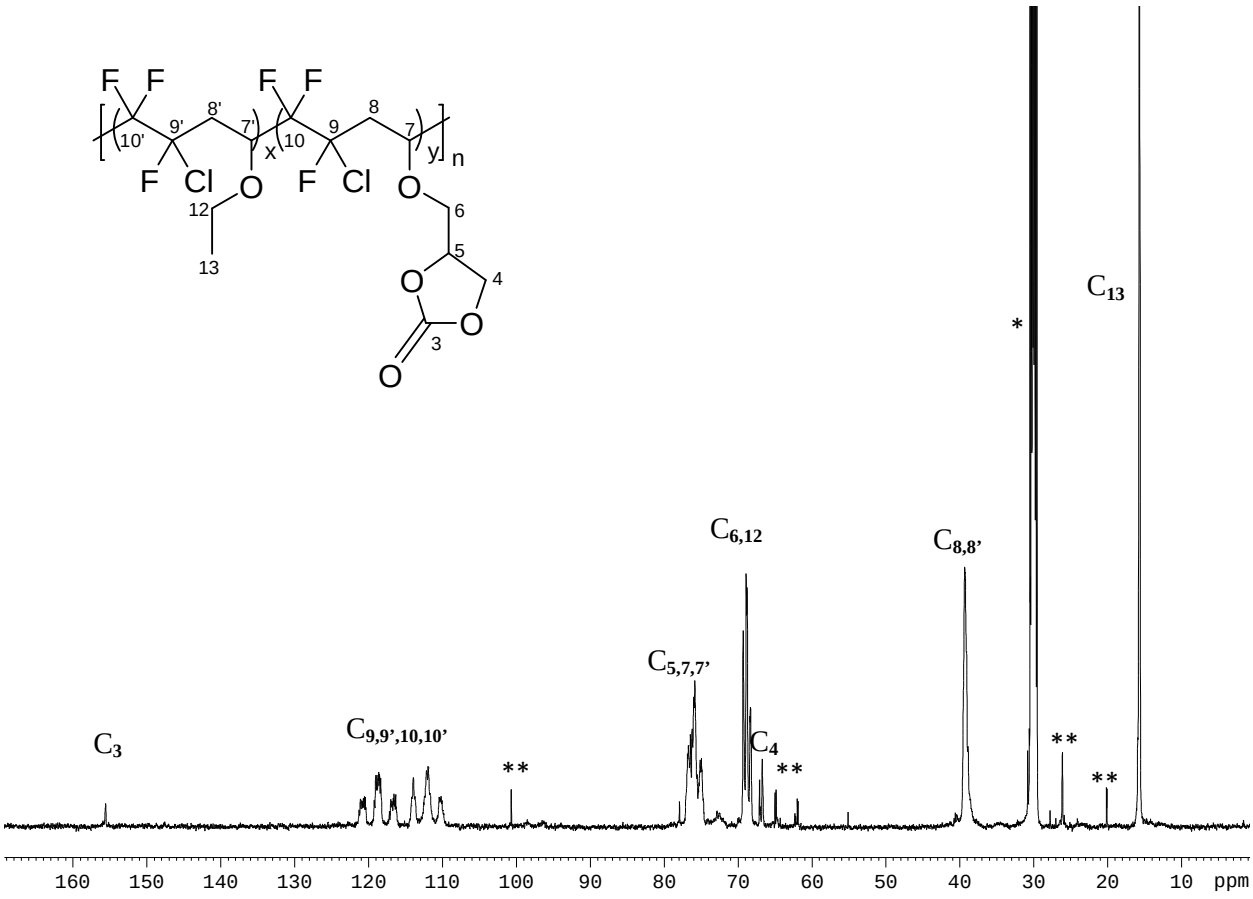

Figure S5: $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, acetone-d_6, 298 K) of a poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer; signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

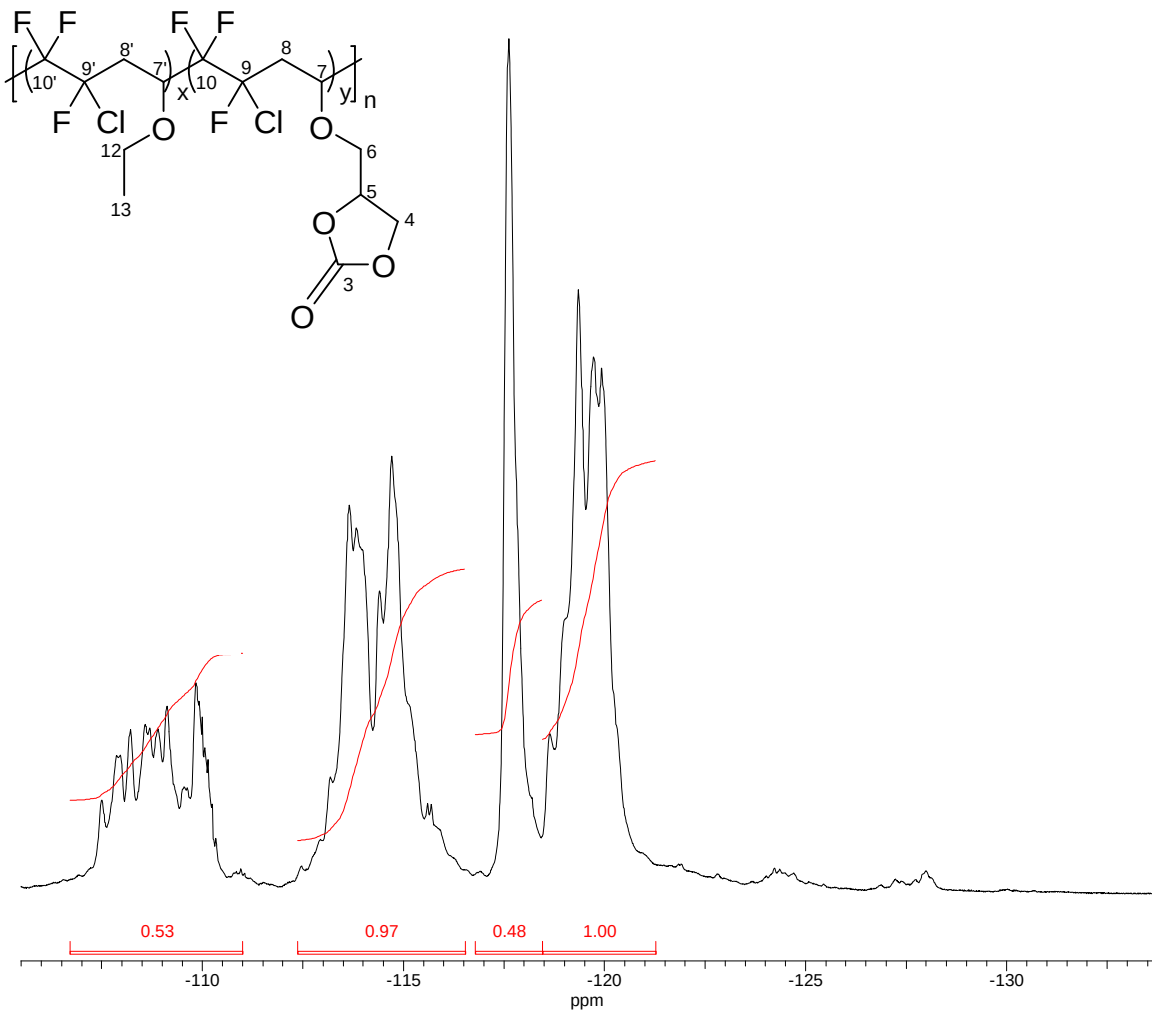

Figure S6: $^{19}F\{^{1}H\}$ NMR spectrum (376 MHz, acetone-d_6, 298 K) of a poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] (**P3**) terpolymer.

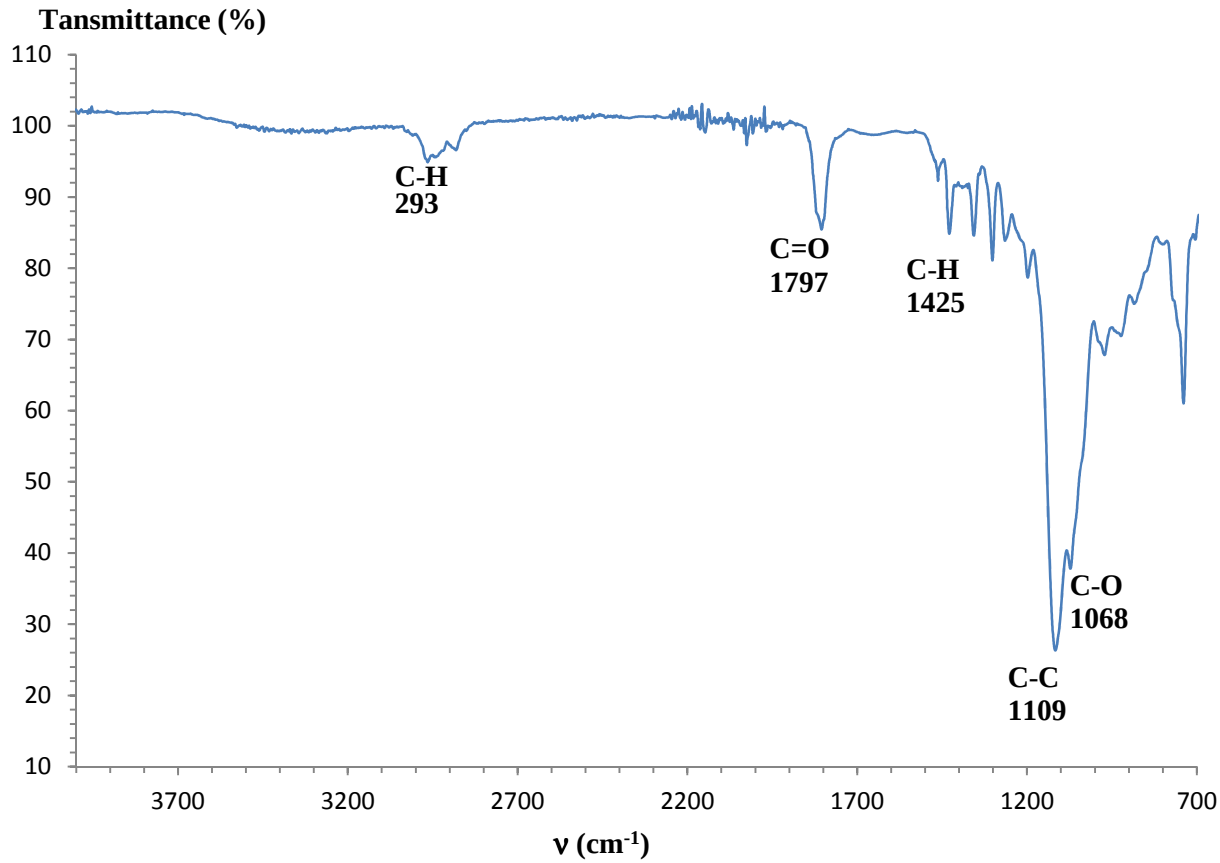

Figure S7: ATR-FTIR spectrum of a poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] (**P3**) terpolymer.

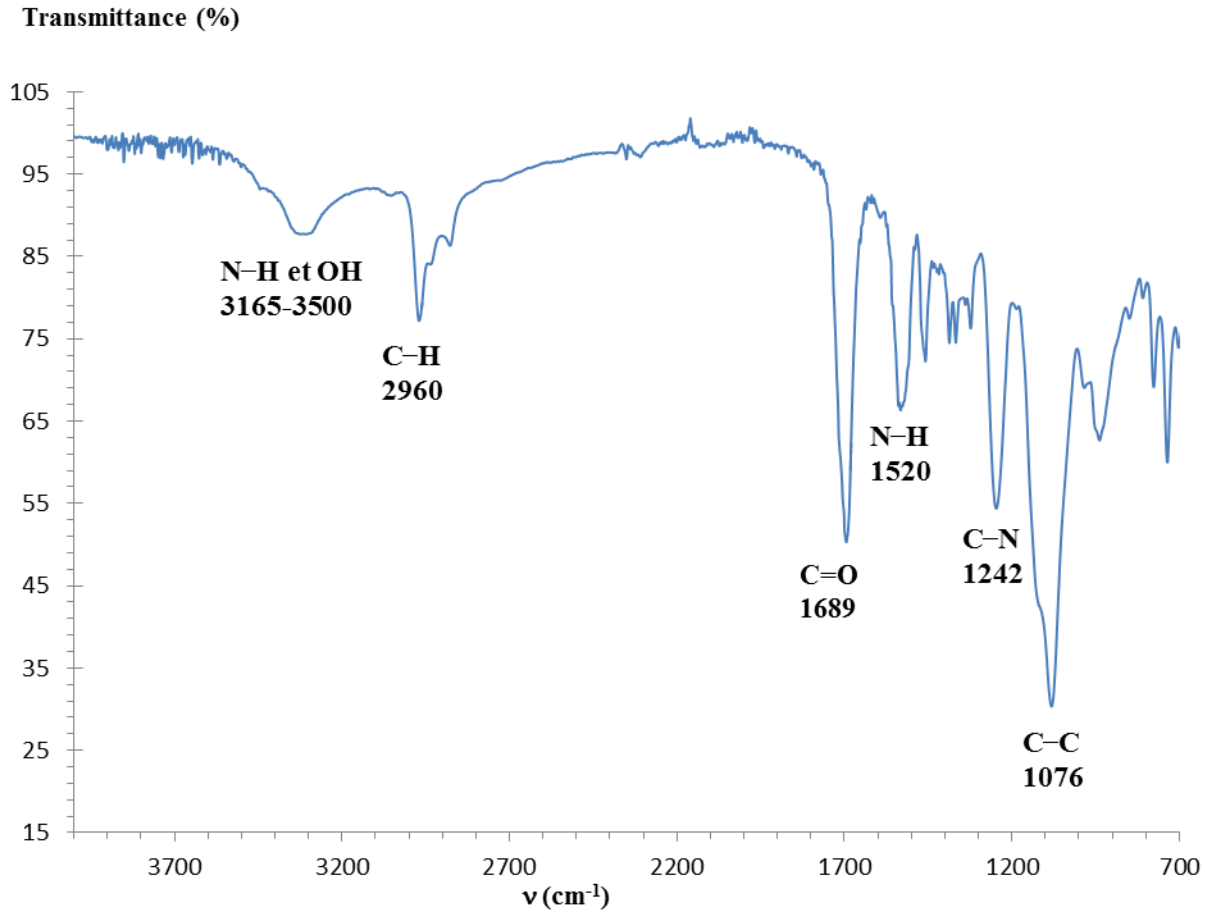

Figure S8: ATR-FTIR spectrum of PFHU **P4** obtained via ring-opening of poly(CTFE-*alt*-GCVE) (**P1**) copolymer by isopropylamine.

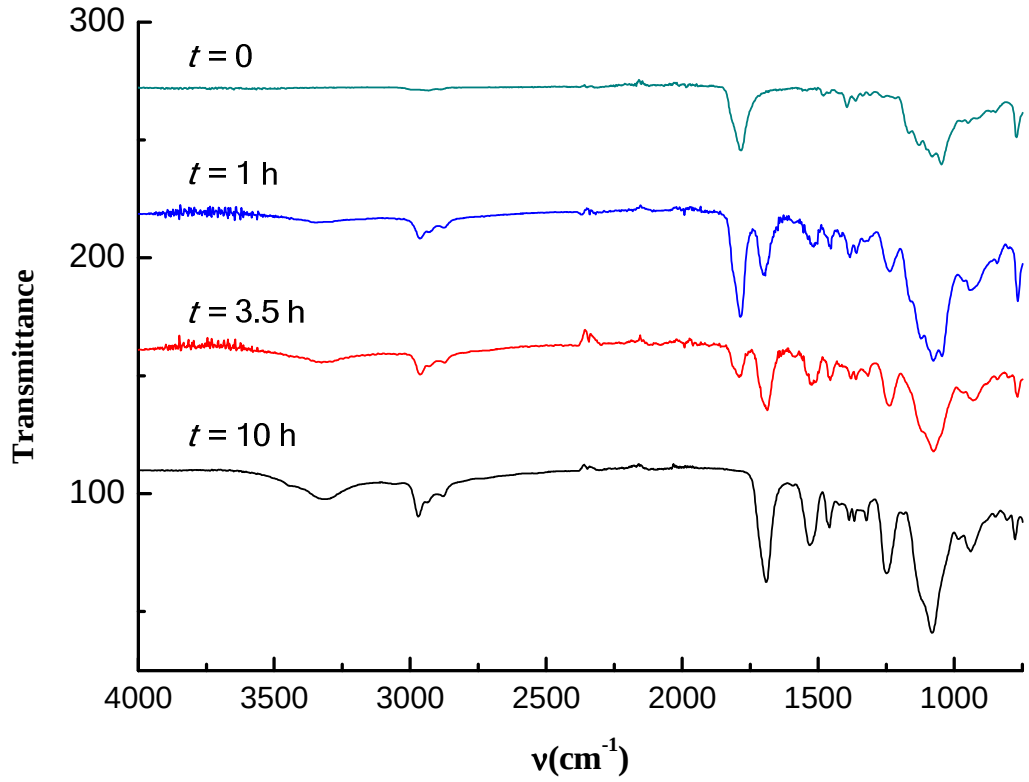

Figure S9: ATR-FTIR monitoring of the ring-opening of poly(CTFE-*alt*-GCVE) (**P1**) copolymer by isopropylamine into PFHU **P4** (reaction ran in CH_2Cl_2 at 50 °C).

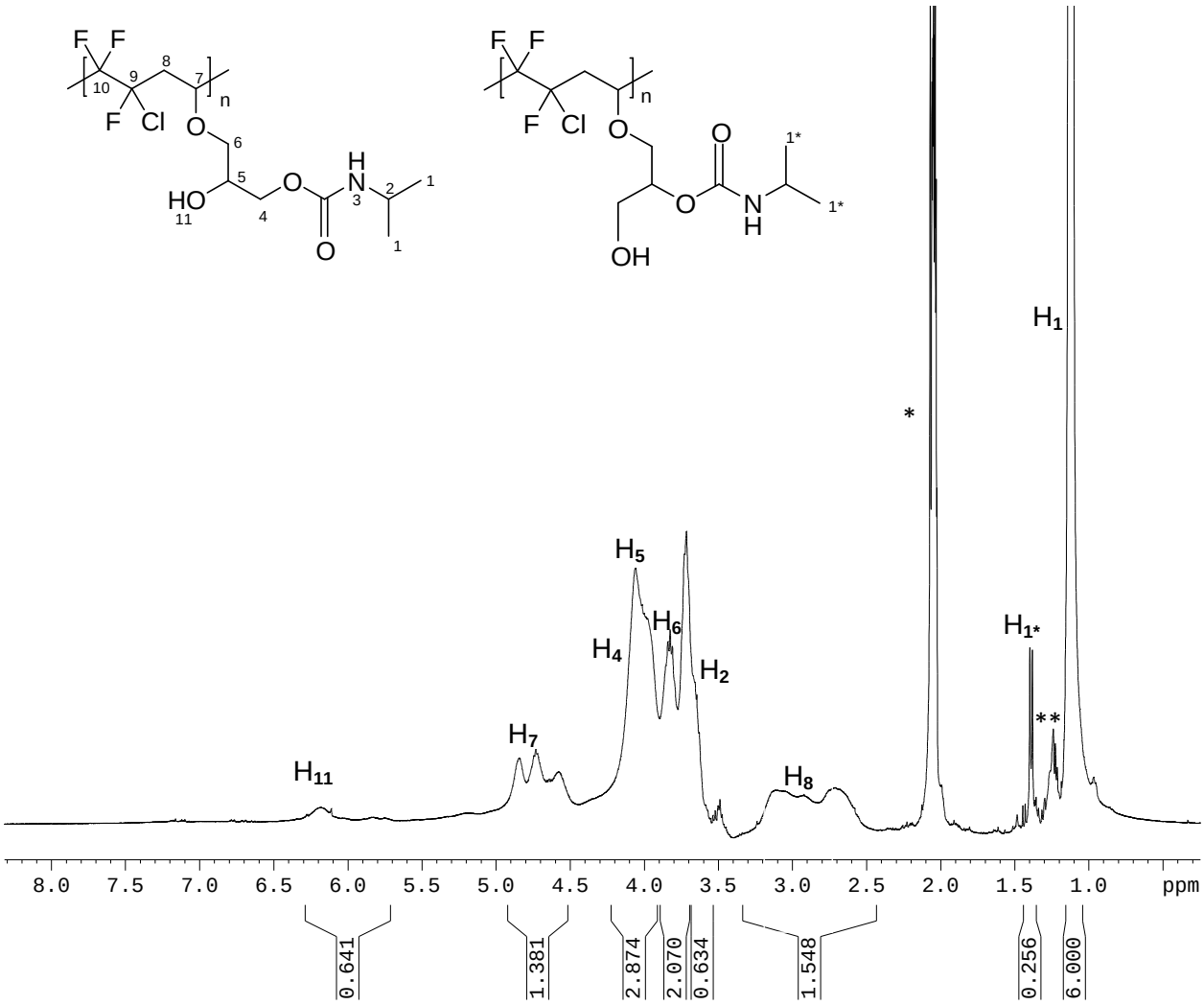

Figure S10: ^{1}H NMR spectrum (400 MHz, acetone-d_6, 298 K) of PFHU **P4**/**P4*** obtained via ring-opening of poly(CTFE-*alt*-GCVE) (**P1**) copolymer by isopropylamine; high-field signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities, * stands for residual solvent resonance.

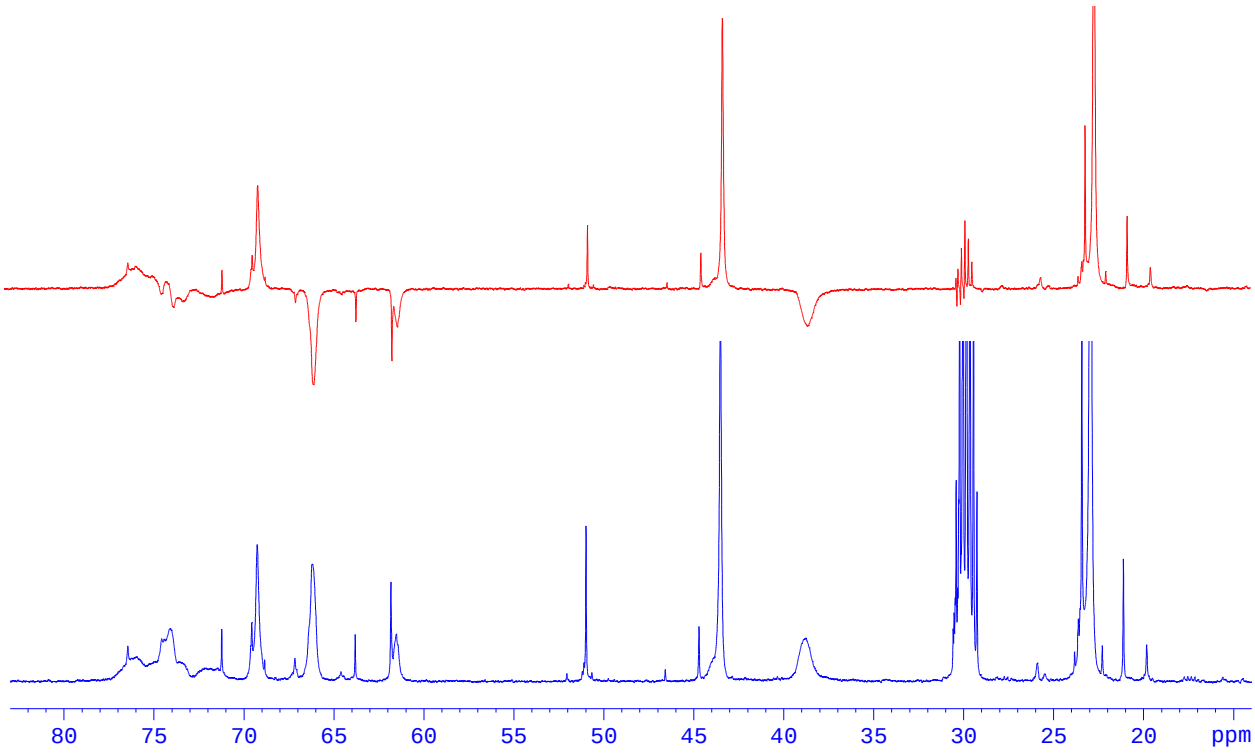

Figure S11: Details of the $^{13}C\{^{1}H\}$ (bottom) and DEPT-135 ^{13}C (top) NMR spectra (100 MHz, acetone-d_6, 298 K) of PFHU **P4**/**P4*** obtained via ring-opening of poly(CTFE-*alt*-GCVE) (**P1**) copolymer by isopropylamine.

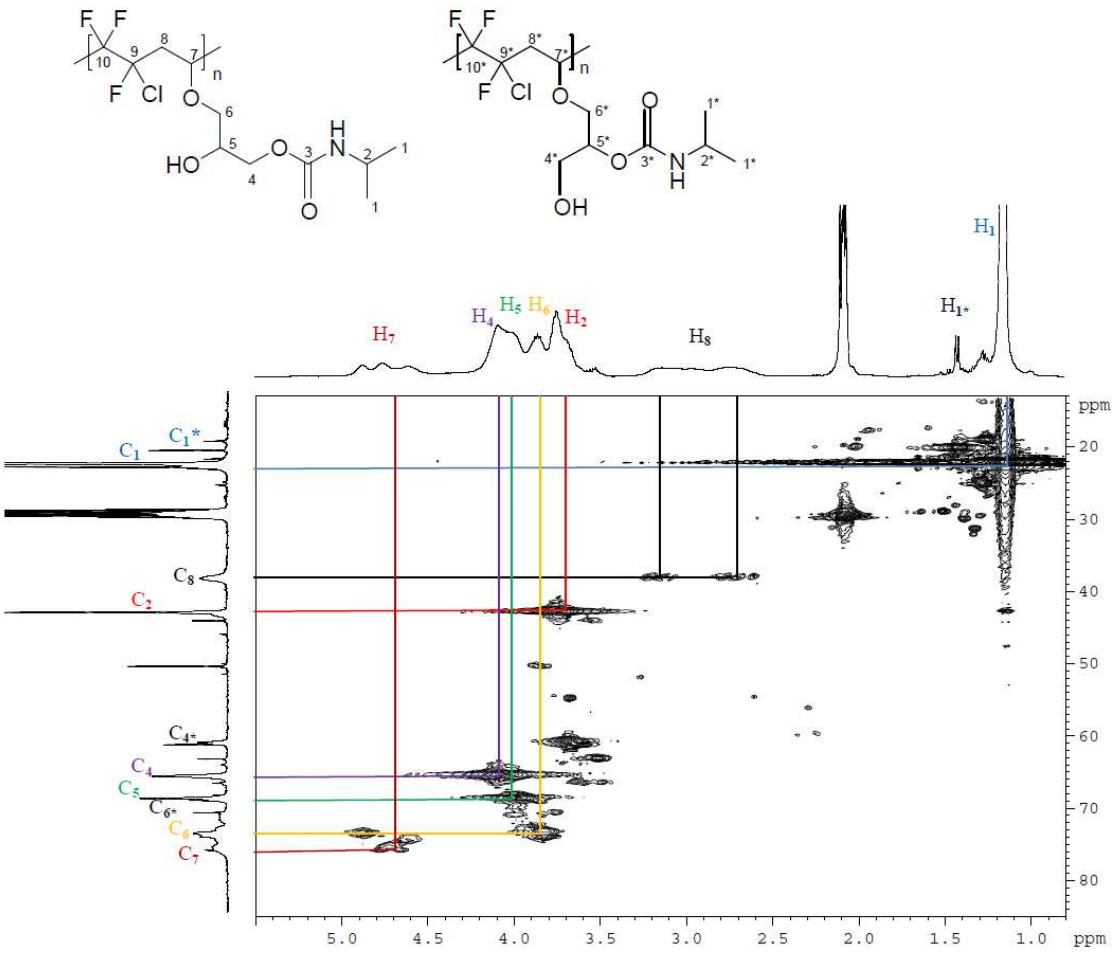

Figure S12: ^{13}C-^{1}H HMQC NMR spectrum (400 MHz, acetone-d_6, 20 ºC) of PFHU **P4/P4*** obtained via ring-opening of poly(CTFE-*alt*-GCVE) (**P1**) copolymer by isopropylamine. Main correlations for the major regioisomer are shown.

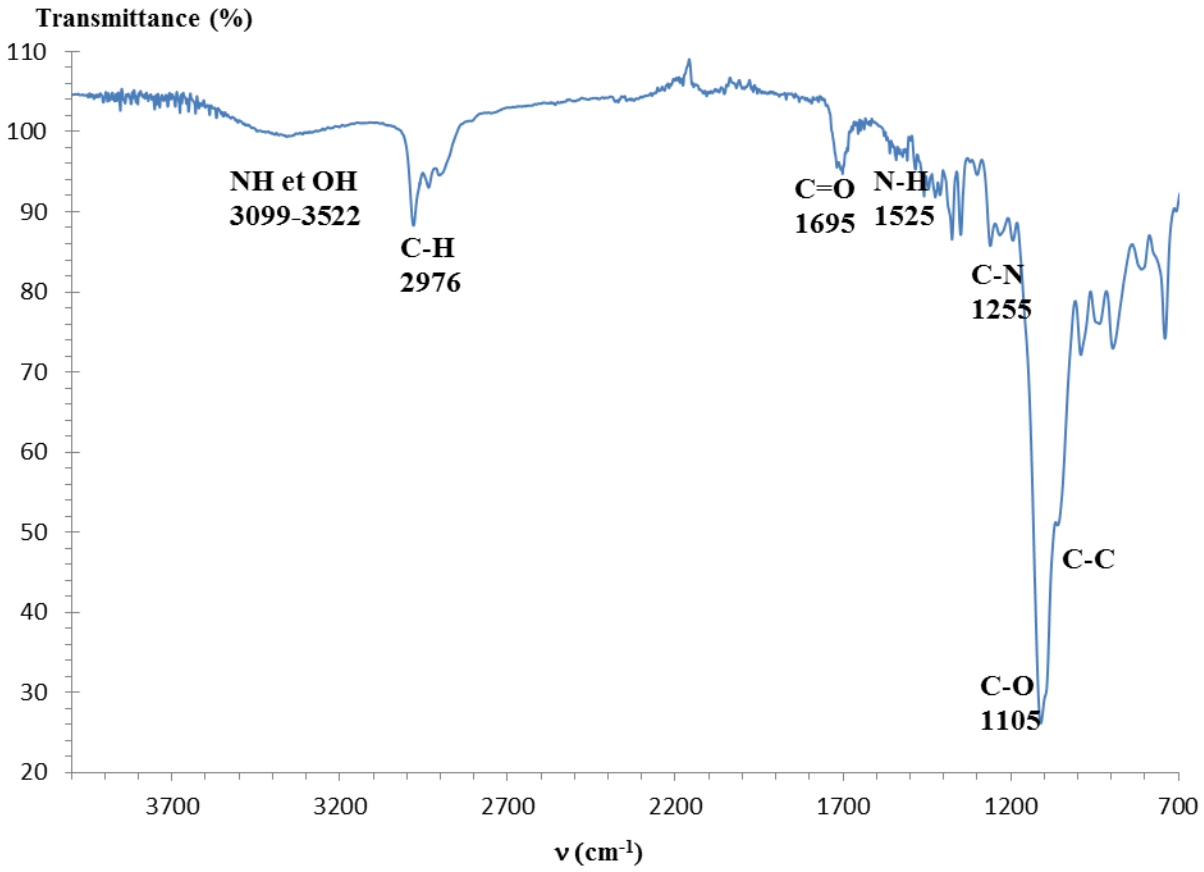

Figure S13: ATR-FTIR spectrum of PFHU **P5** obtained via ring-opening of poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] (**P2**) terpolymer by isopropylamine

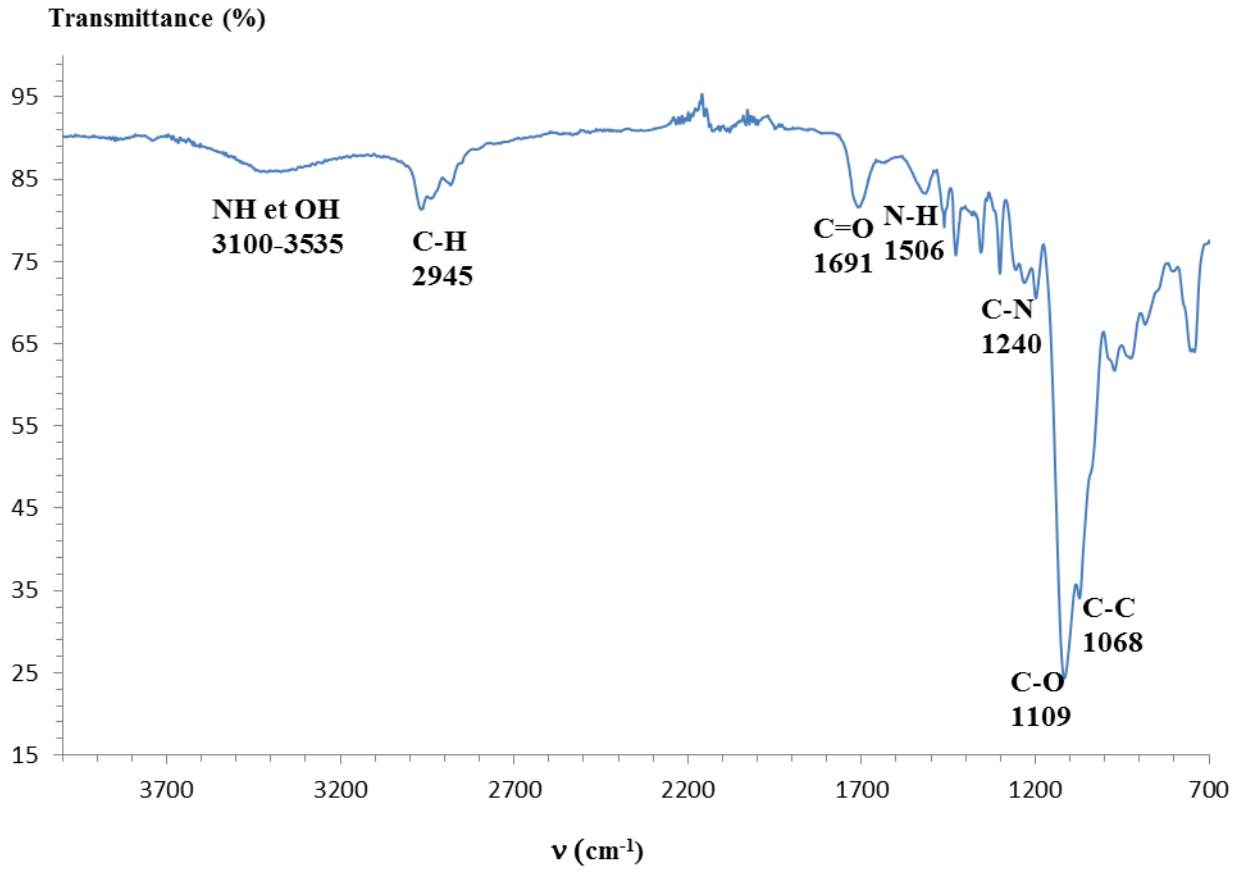

Figure S14: ATR-FTIR spectrum of PFHU **P6** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine.

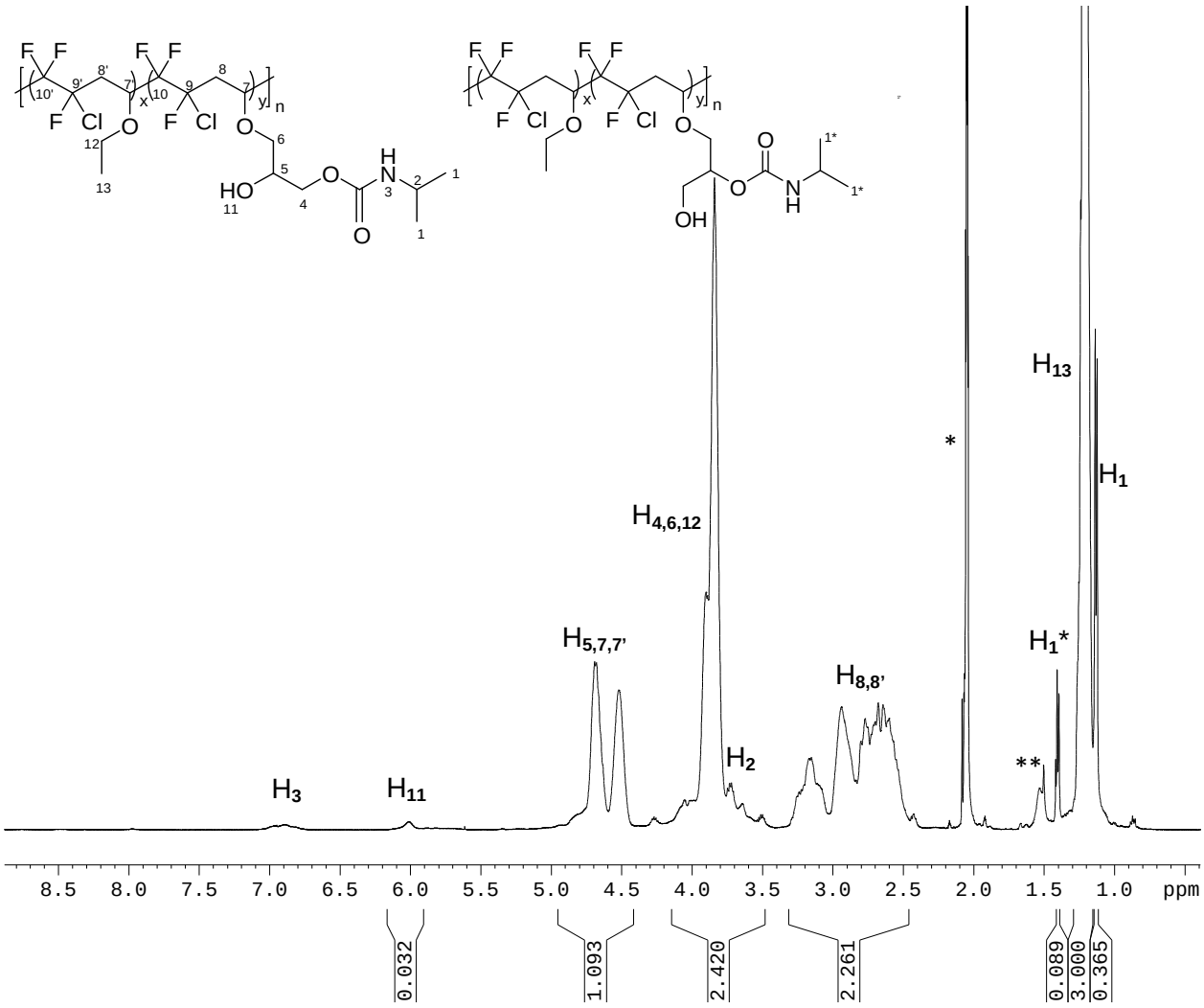

Figure S15: ^{1}H NMR spectrum (400 MHz, acetone-d_6, 298 K) of PFHU **P5/P5*** obtained via ring-opening of poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer by isopropylamine; high-field signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

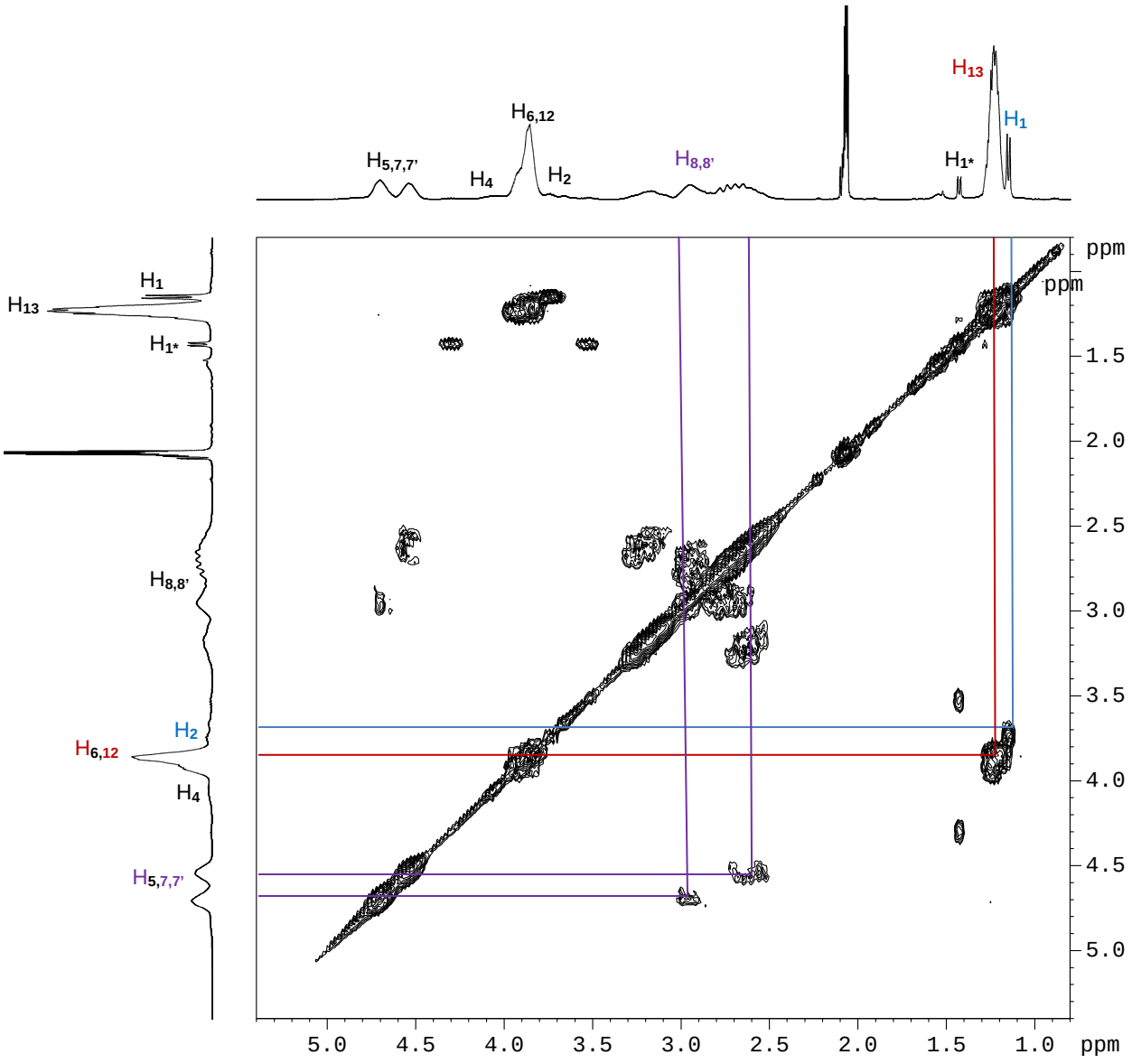

Figure S16: ^{1}H-^{1}H COSY NMR spectrum (400 MHz, acetone-d_6, 298 K) of PFHU **P5/P5*** obtained via ring-opening of poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer by isopropylamine.

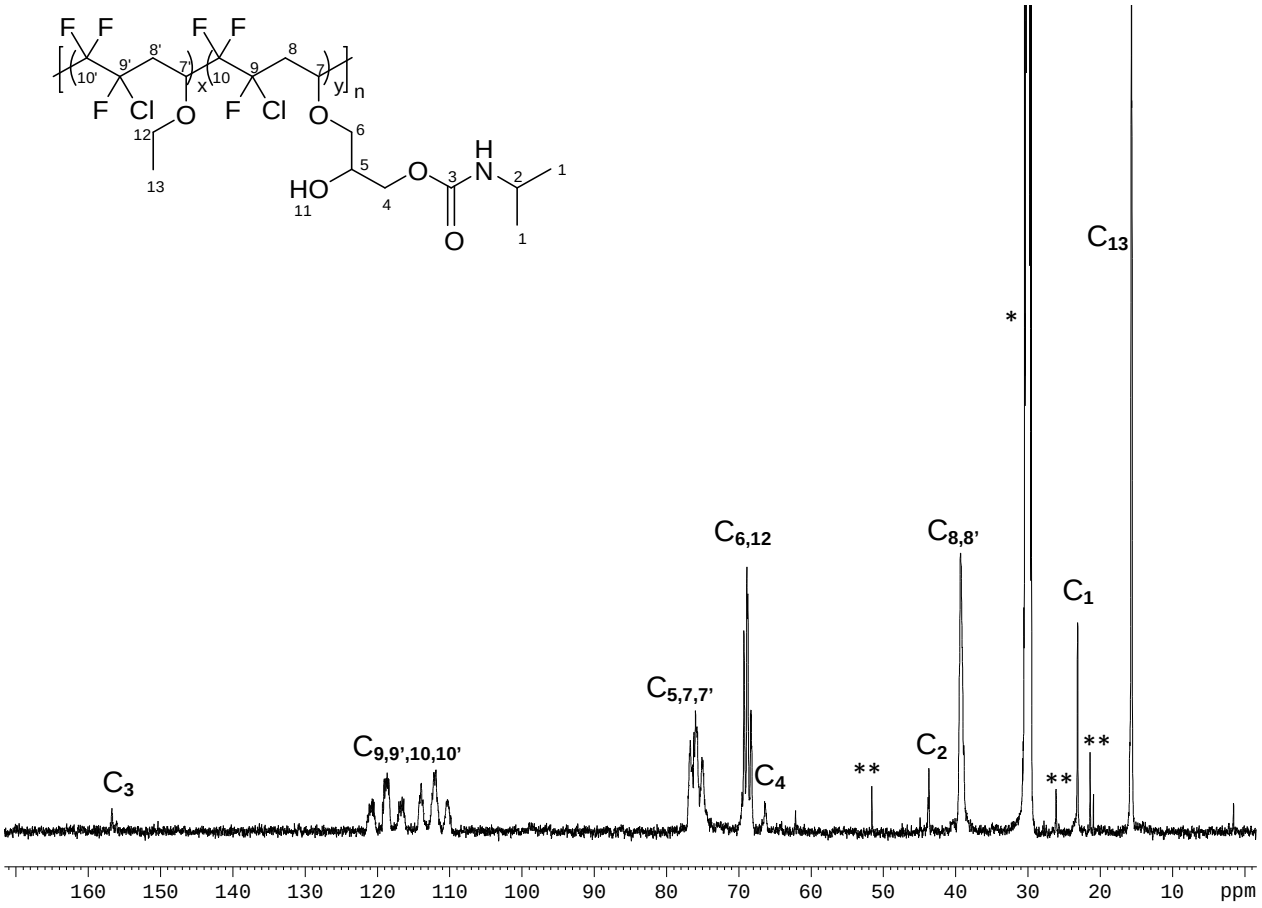

Figure S17: $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, acetone-d_6, 20 ºC) of PFHU **P5/P5*** obtained via ring-opening of poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer by isopropylamine; signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

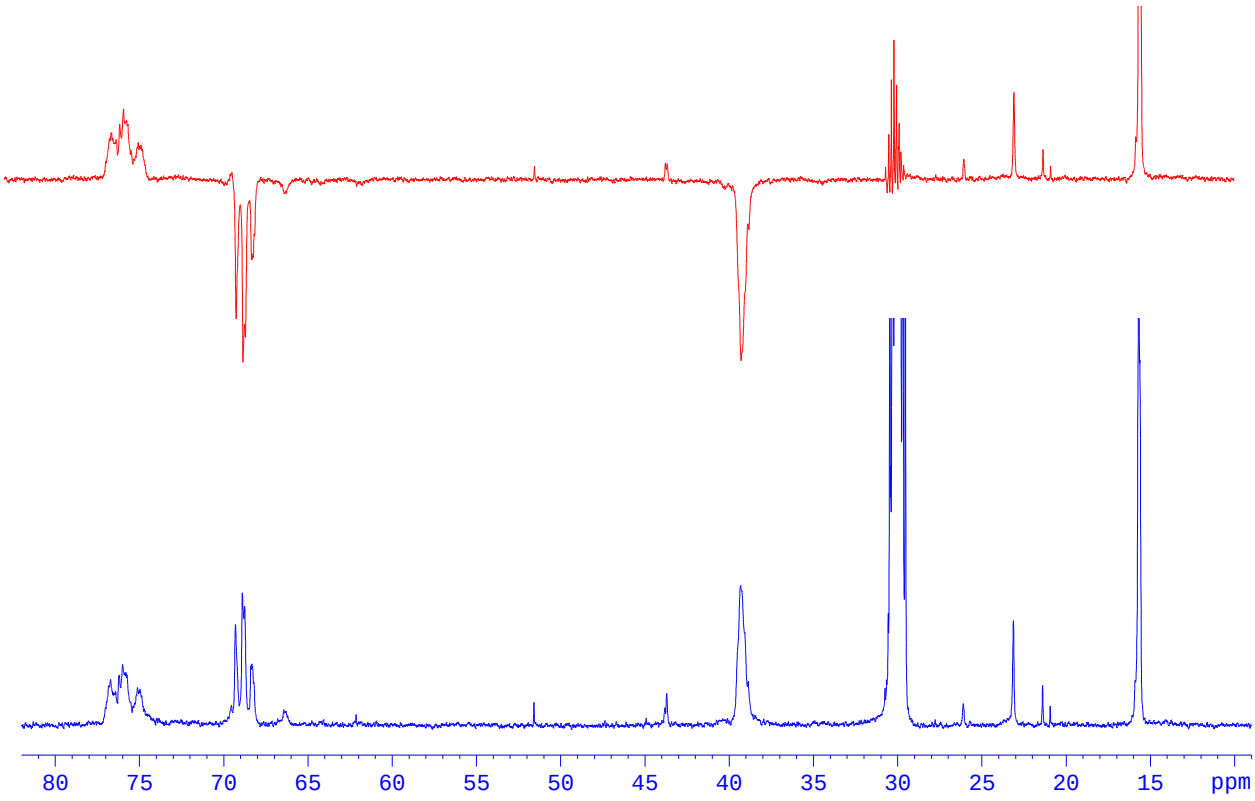

Figure S18: Details of the $^{13}C\{^{1}H\}$ (bottom) and DEPT-135 ^{13}C (top) NMR spectra (100 MHz, acetone-d_6, 298 K) of PFHU **P5/P5*** obtained via ring-opening of poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer by isopropylamine.

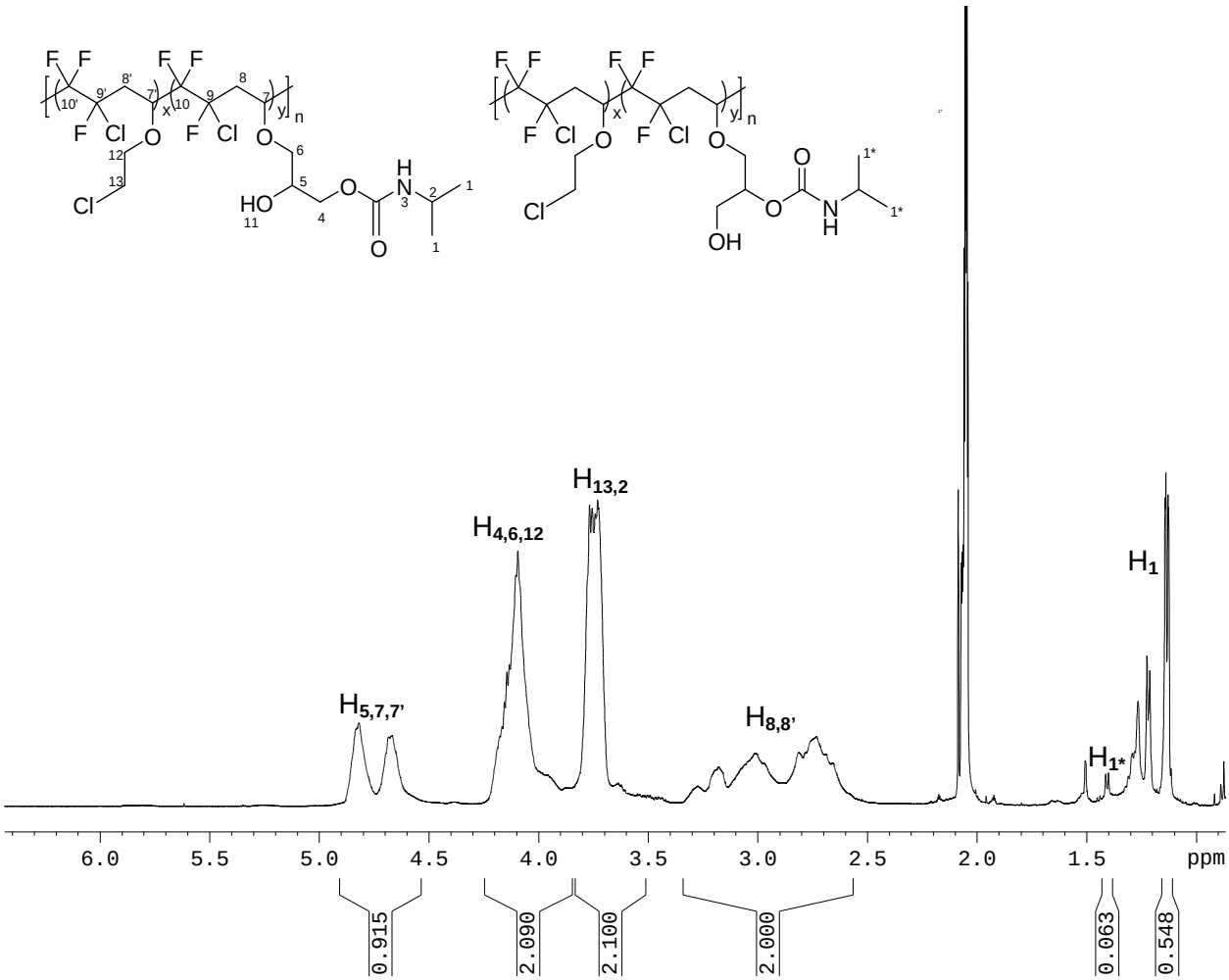

Figure S19: ^{1}H NMR spectrum (400 MHz, acetone-d_6, 298 K) of PFHU **P6**/**P6*** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine.

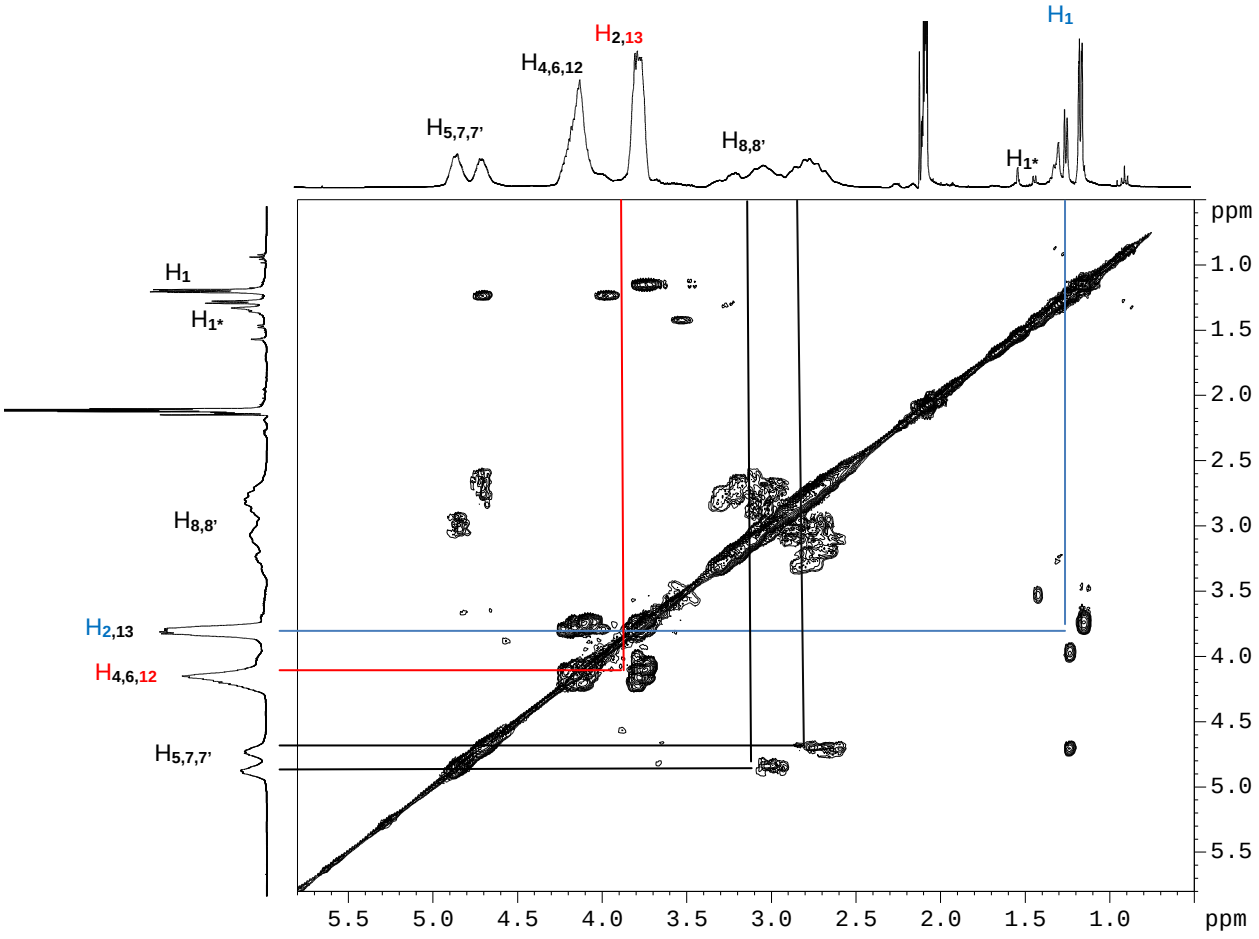

Figure S20: ^{1}H-^{1}H COSYNMR spectrum (400 MHz, acetone-d_6, 298 K) of PFHU **P6/P6*** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine.

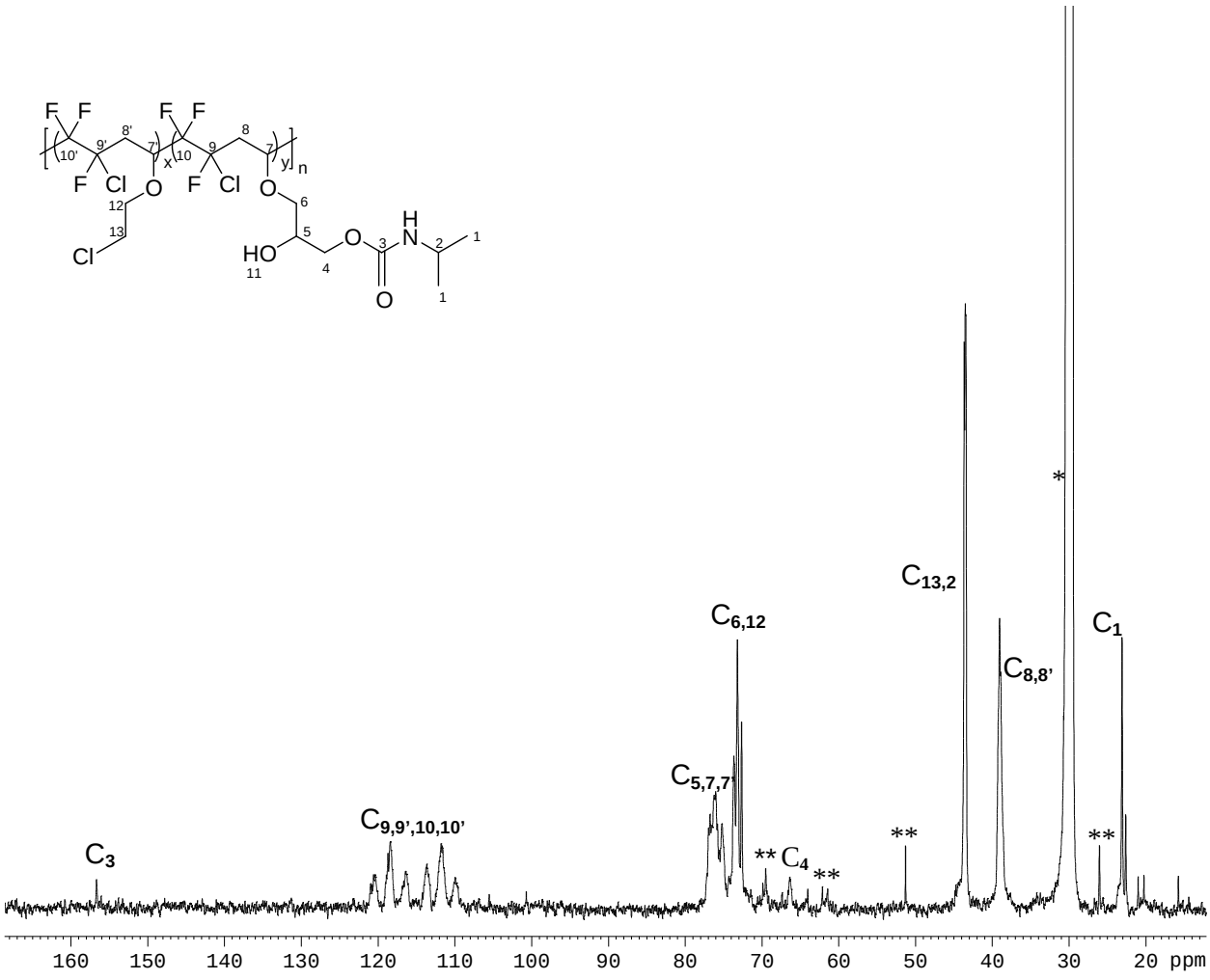

Figure S21: $^{13}C\{^{1}H\}$ NMR spectrum (100 MHz, acetone-d_6, 20 ºC) of PFHU **P6/P6*** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine; signals with ** markers correspond to initiating groups (*t*Bu) and minor impurities. * stands for residual solvent resonance.

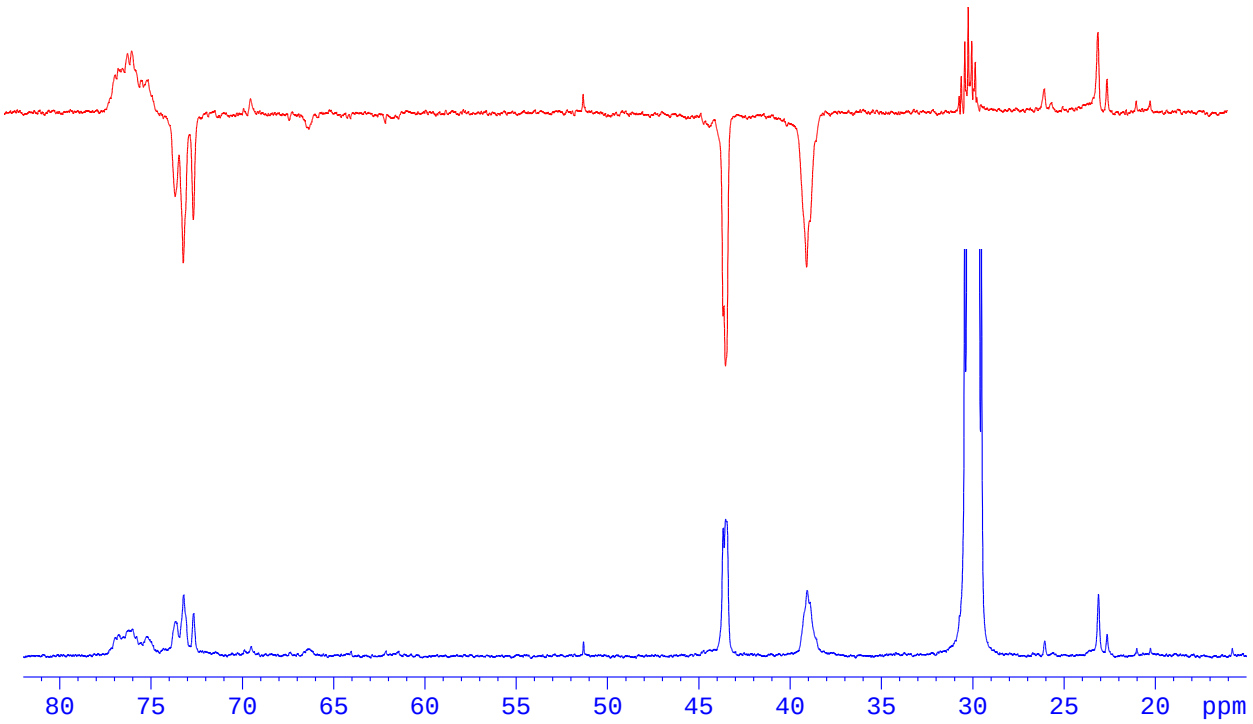

Figure S22: Details of the $^{13}C\{^{1}H\}$ (bottom) and DEPT-135 ^{13}C (top) NMR spectra (100 MHz, acetone-d_6, 298 K) of PFHU **P6/P6*** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine

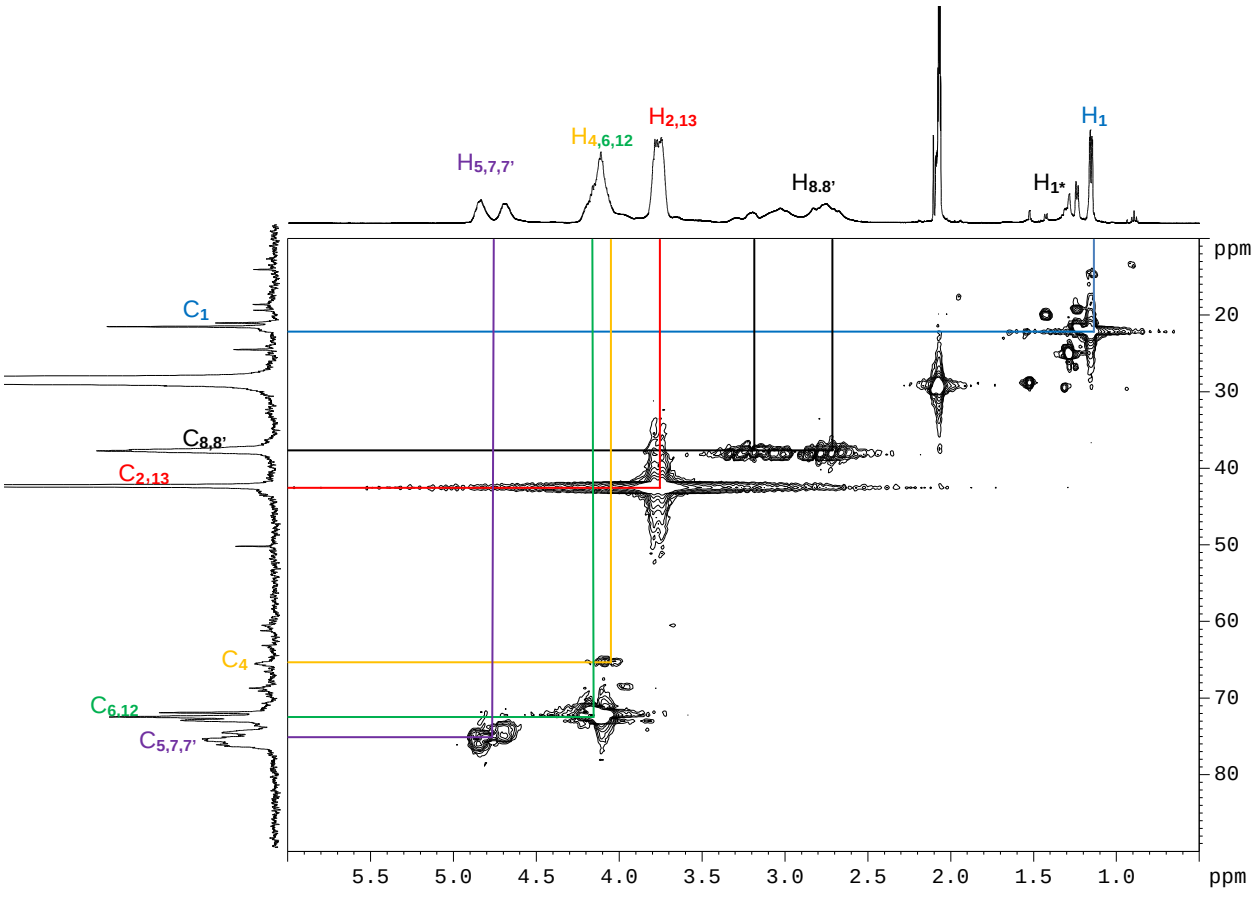

Figure S23: ^{13}C-^{1}H HMQC NMR spectrum (400 MHz, acetone-d_6, 20 ºC) of PFHU **P6/P6*** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] (**P3**) terpolymer by isopropylamine. Main correlations for the major regioisomer are shown.

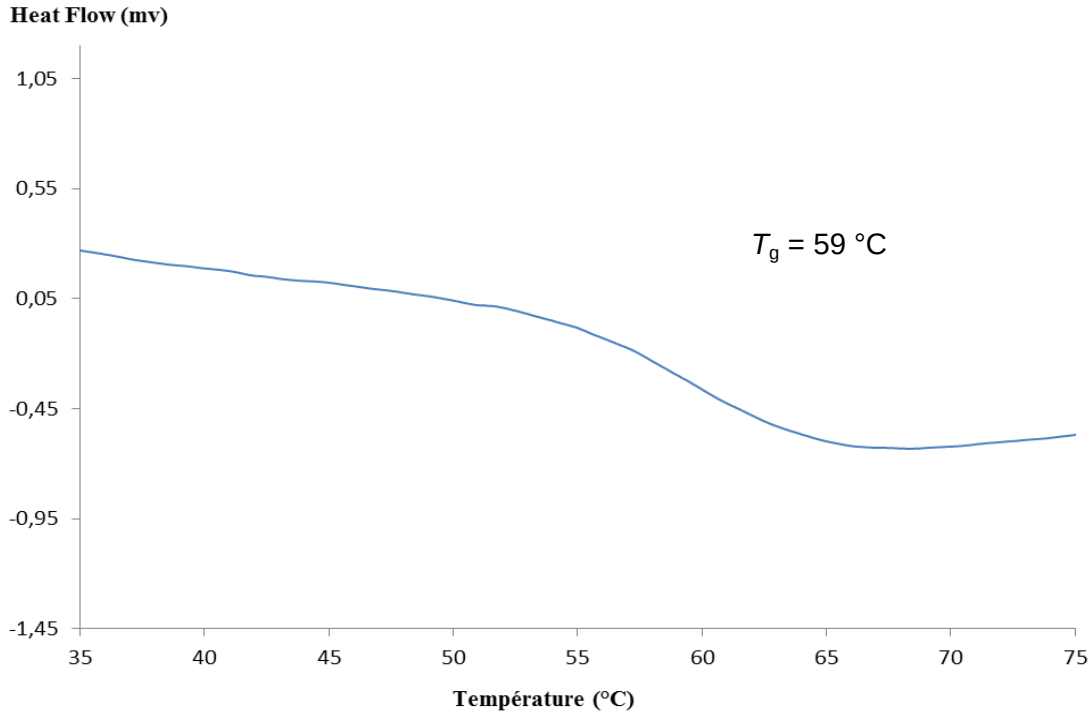

Figure S24: DSC trace (–20 to 100 °C; 20 °C.min^{-1}, 2$_{nd}$ cycle) of a poly[(CTFE-*alt*-GCVE) (**P1**) copolymer.

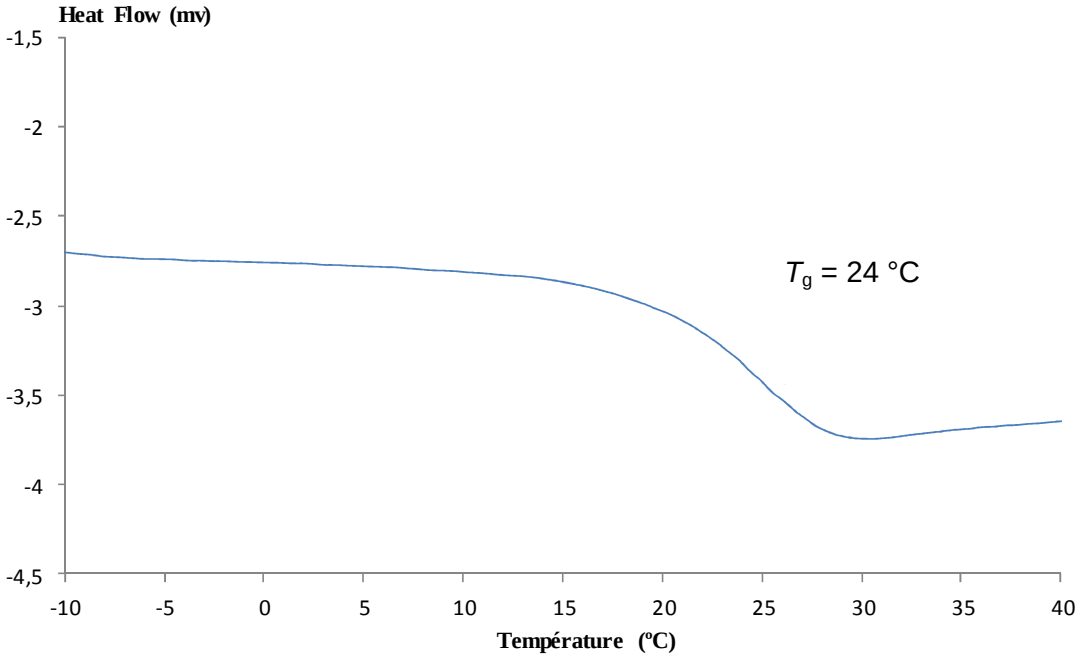

Figure S25: DSC trace (–50 to 200 °C; 20 °C.min^{-1}, 2nd cycle) of a poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] **(P2)** terpolymer.

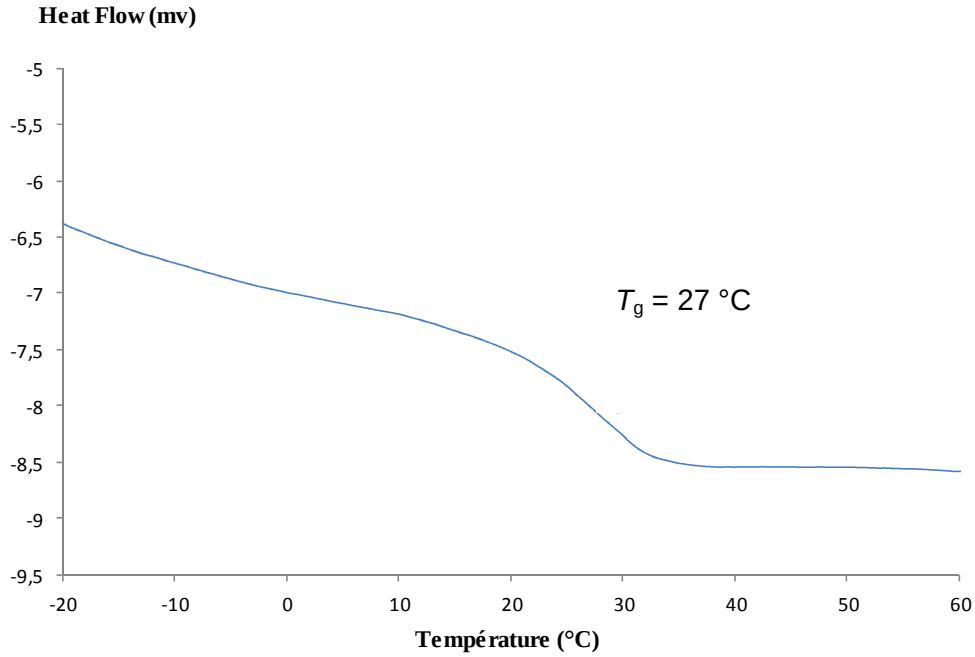

Figure S26: DSC trace (–50 to 100 °C; 20 °C.min^{-1}, 2nd cycle) of a poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)**.

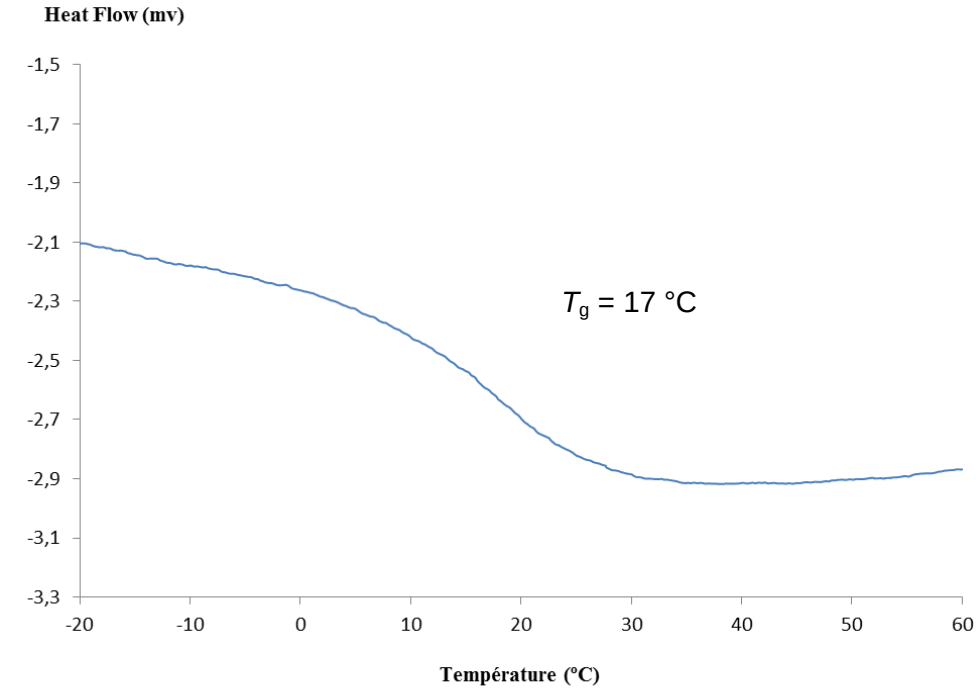

Figure S27: DSC trace (–40 to 90 °C; 10 °C.min^{-1}, 2nd cycle) of PFHU **P4** obtained via ring-opening of a poly[(CTFE-*alt*-GCVE)] (**P1**) copolymer.

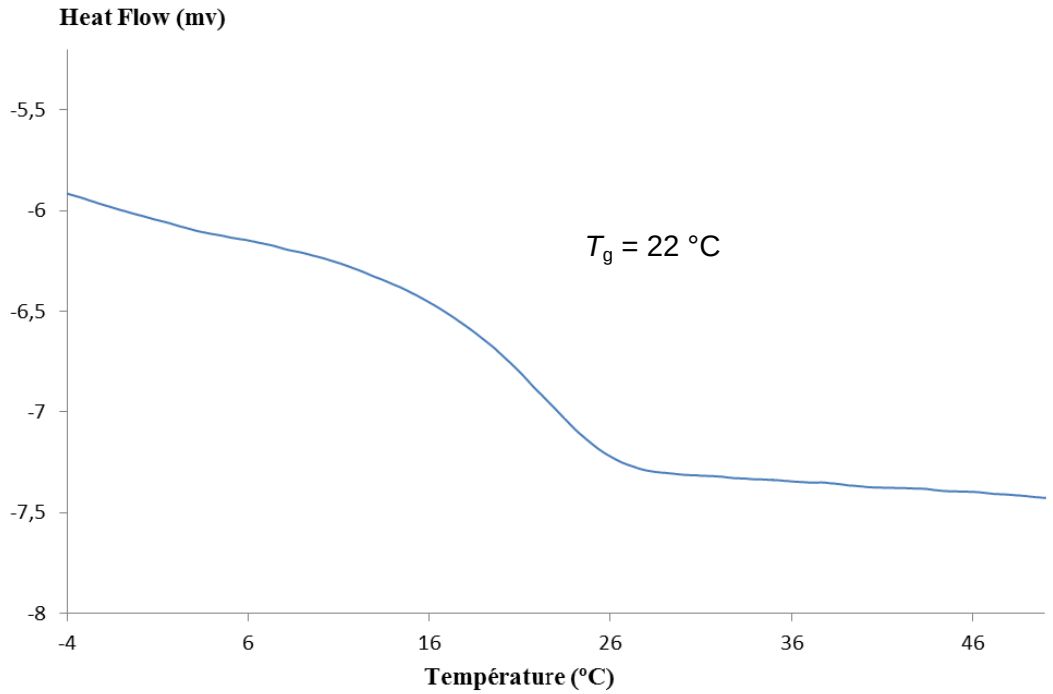

Figure S28: DSC trace (–50 to 90 °C; 20 °C.min^{-1}, 2nd cycle) of PFHU **P5** obtained via ring-opening of a poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] (**P2**) terpolymer.

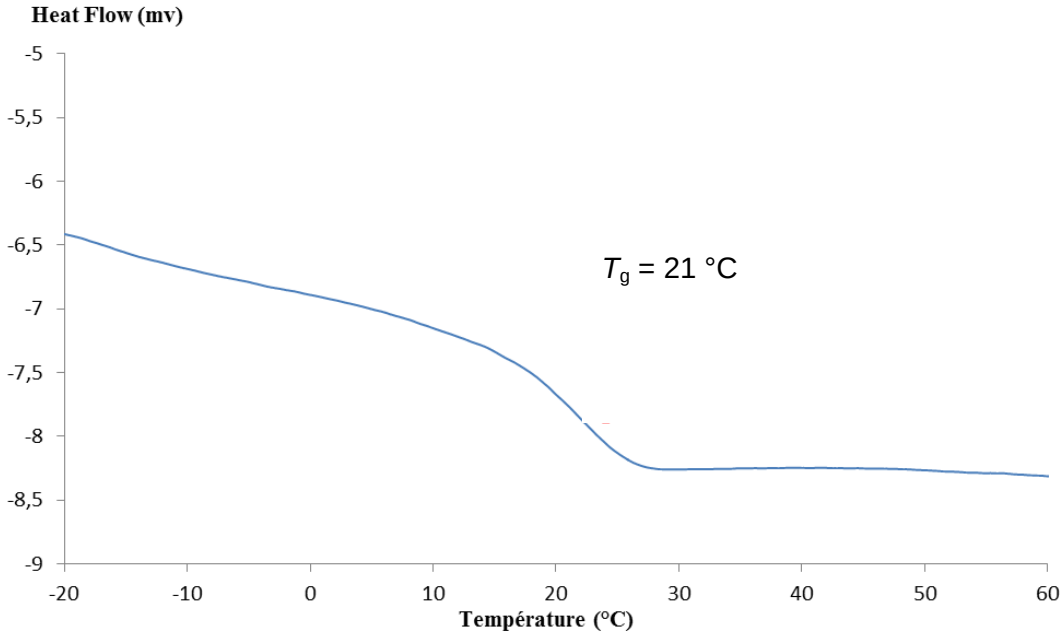

Figure S29: DSC trace (–50 to 100 °C; 20 °C.min^{-1}, 2nd cycle) of PFHU **P6** obtained via ring-opening of poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)** terpolymer by isopropylamine.

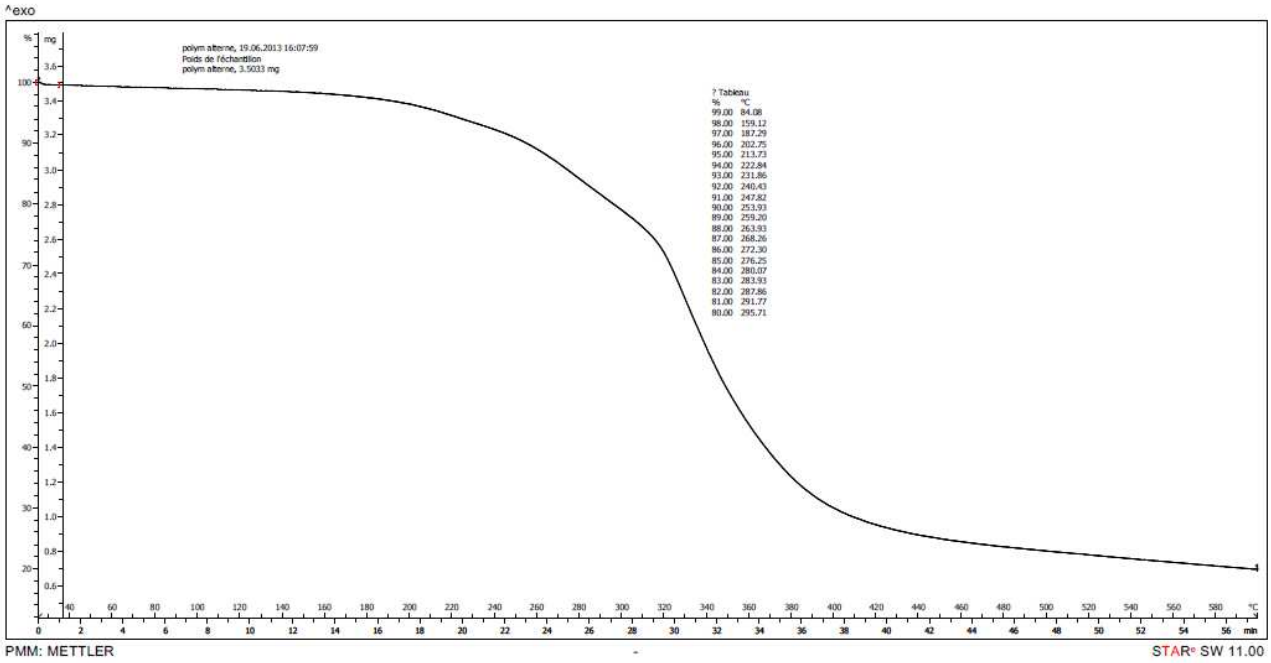

Figure S30: TGA trace of a poly[(CTFE-*alt*-GCVE) (**P1**) copolymer

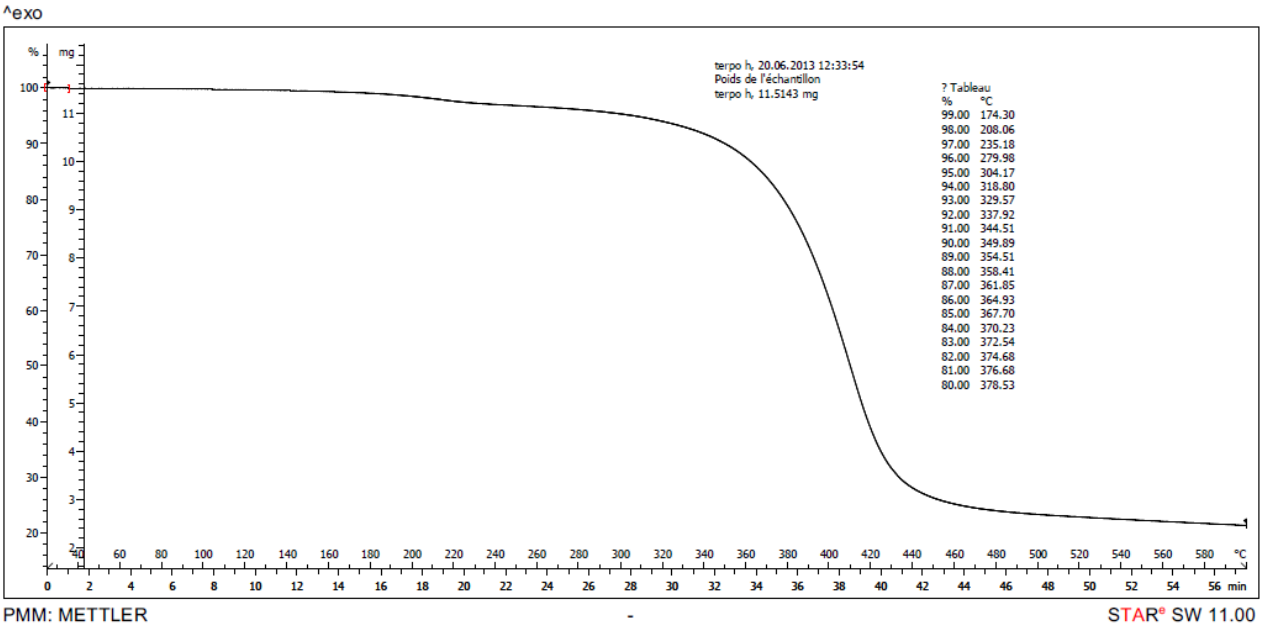

Figure S31: TGA trace of a poly[(CTFE-*alt*-EVE)-*co*-(CTFE-*alt*-GCVE)] (**P2**) terpolymer

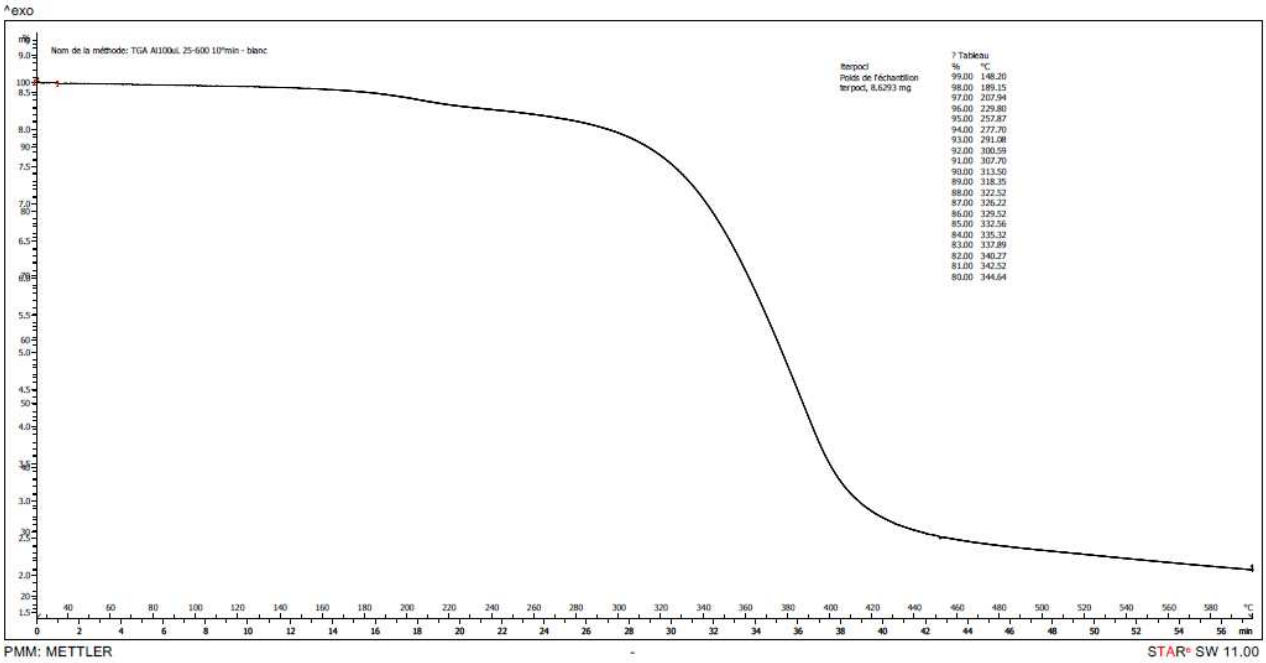

Figure S32: TGA trace of a poly[(CTFE-*alt*-CEVE)-*co*-(CTFE-*alt*-GCVE)] **(P3)**

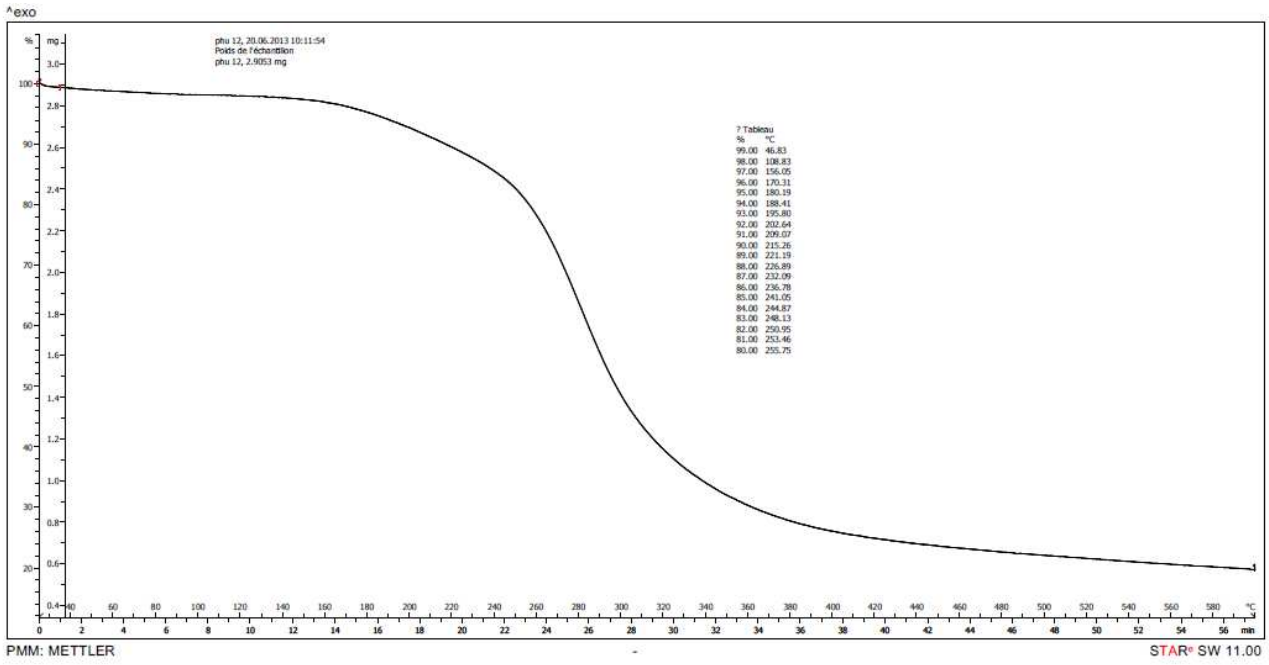

Figure S33: TGA trace of PFHU **P4**

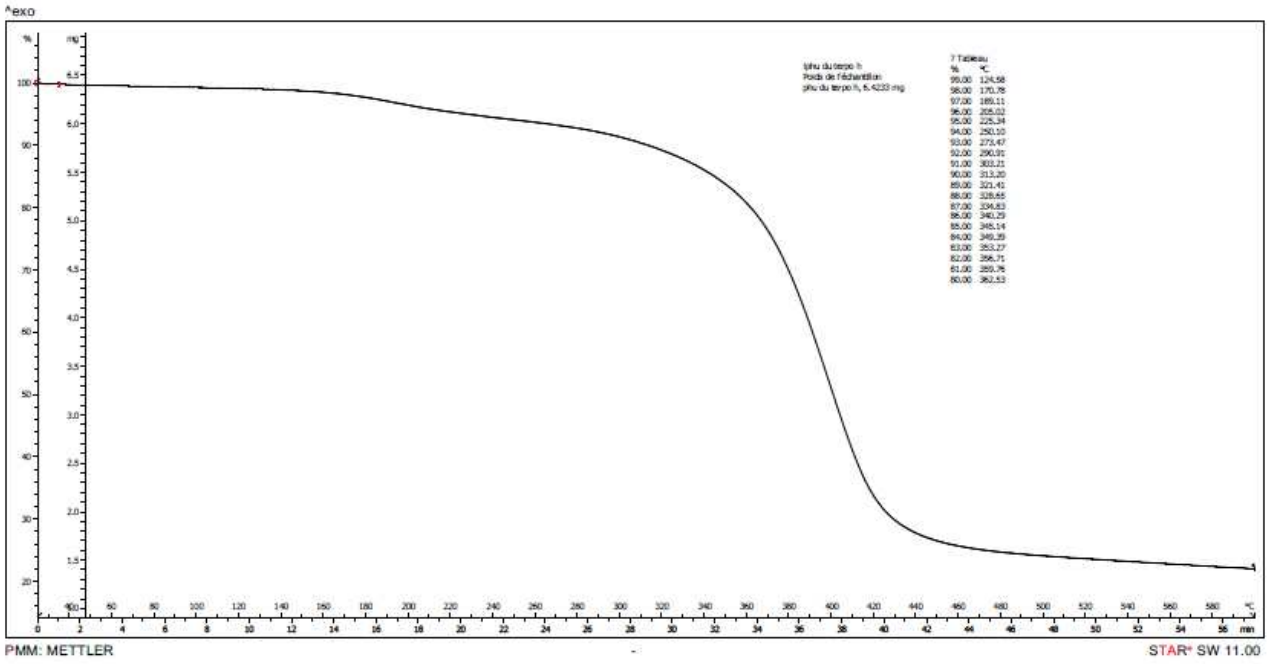

Figure S34: TGA trace of PFHU **P5**