

Synthesis and Evaluation Terpolymers consist of Methacrylates with Maleic anhydride and Methacrylic Morpholine and Their Amine Compound as Pour Point Depressants in Diesel Fuels

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Supporting Information

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1. NMR SPECTRA OF COMPOUNDS AND TERPOLYMERS

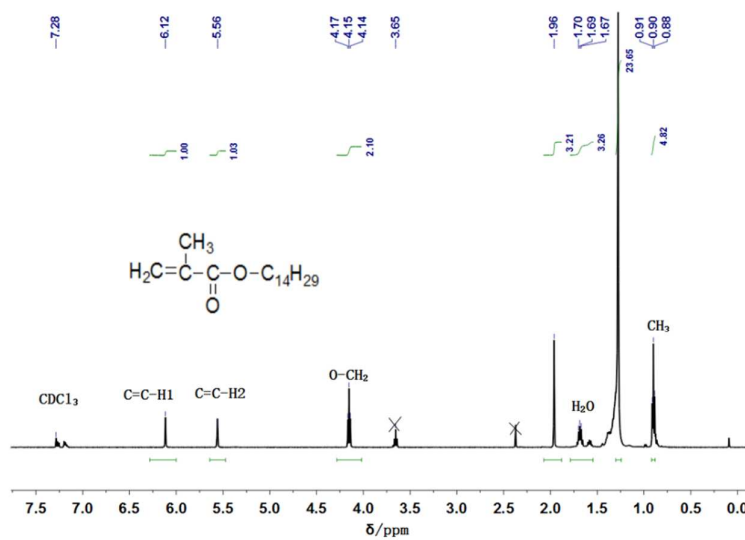


Figure S1. ¹H NMR spectrum (400 MHz) of **methyl acrylic fourteen ester** recorded in CDCl₃ at 298 K.

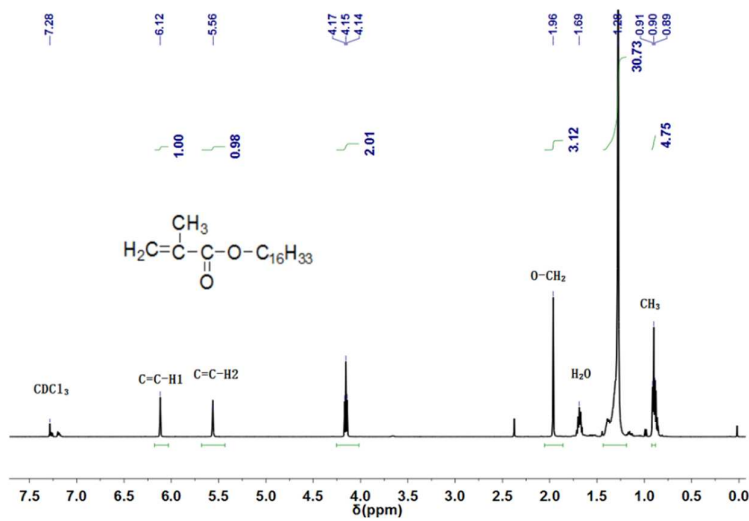


Figure S2. ¹H NMR spectrum (400 MHz) of **methyl acrylic fourteen ester** recorded in CDCl₃ at 298 K.

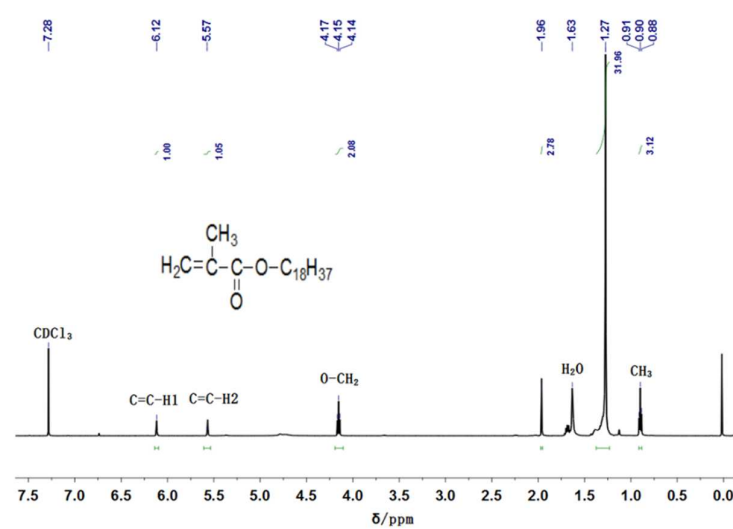


Figure S3. ¹H NMR spectrum (400 MHz) of **methyl acrylic eighteen ester** recorded in CDCl₃ at

298 K.

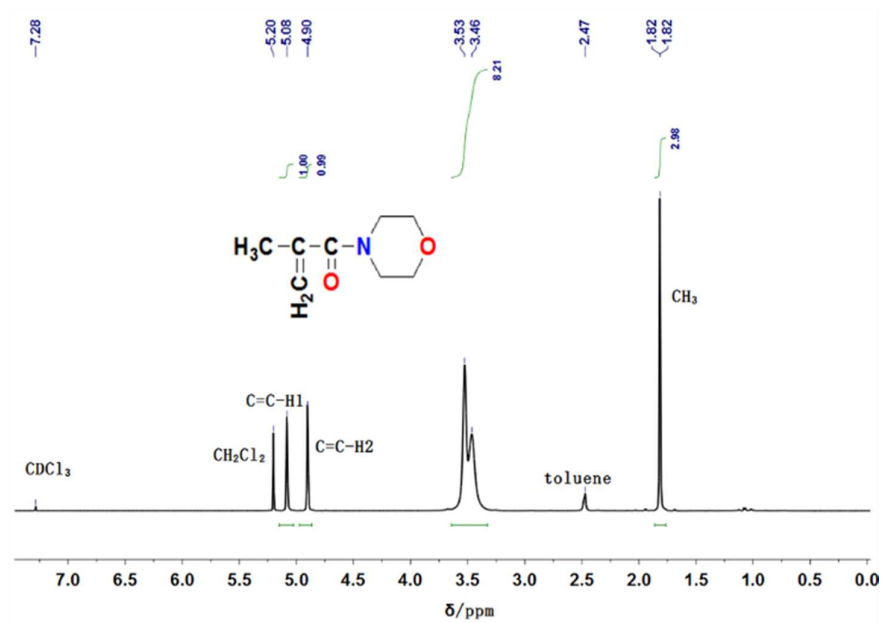


Figure S4. ¹H NMR spectrum (400 MHz) of **methyl acryloyl morpholine** recorded in CDCl₃ at

298 K.

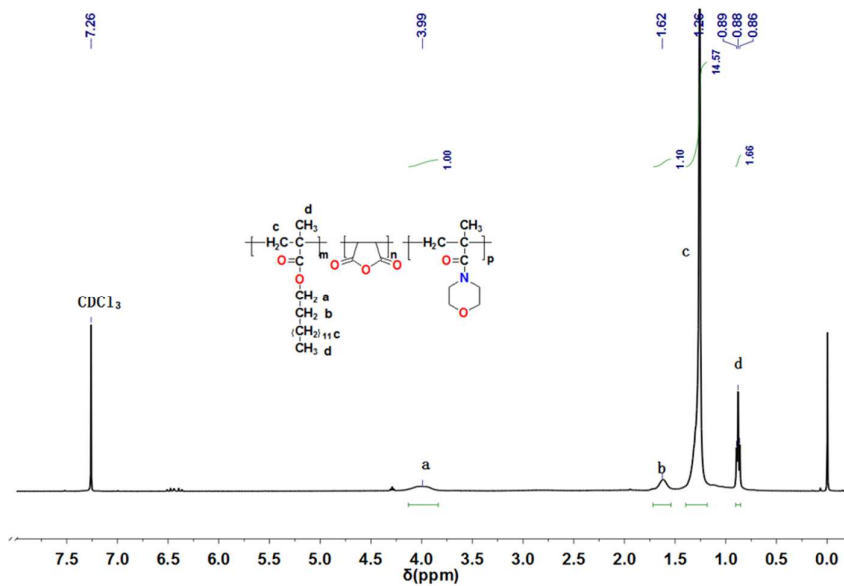


Figure S5. ^1H NMR spectrum (400 MHz) of **C14MC-MA-MCNR₂** recorded in CDCl_3 at 298 K.

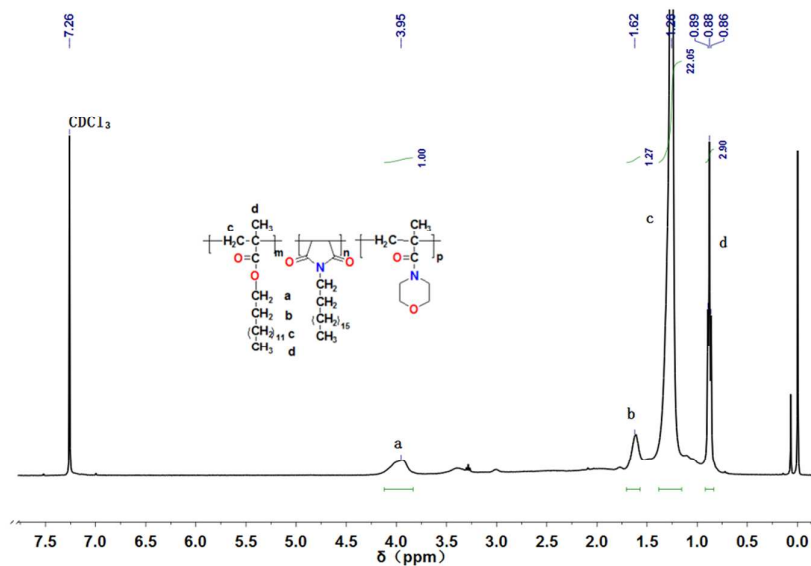


Figure S6. ^1H NMR spectrum (400 MHz) of **C14MC-MA-MCNR₂-A** recorded in CDCl_3 at 298

K

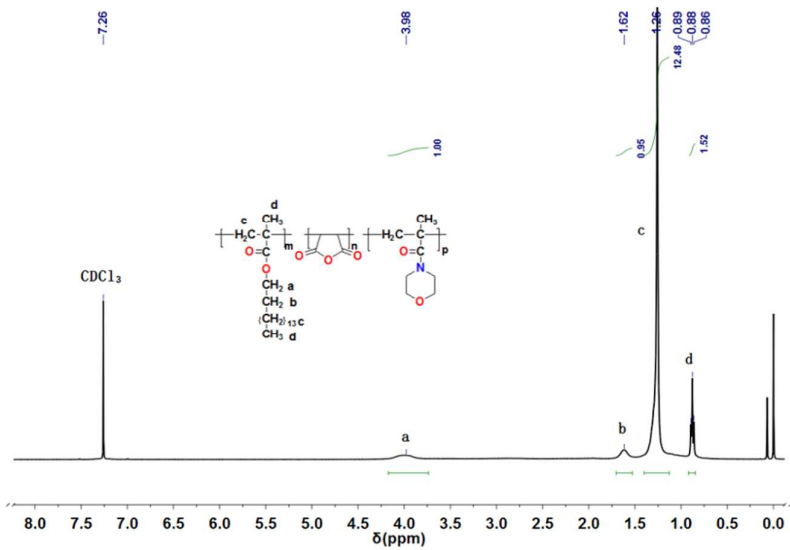


Figure S7. ¹H NMR spectrum (400 MHz) of **C16MC-MA-MCNR₂** recorded in CDCl₃ at 298 K

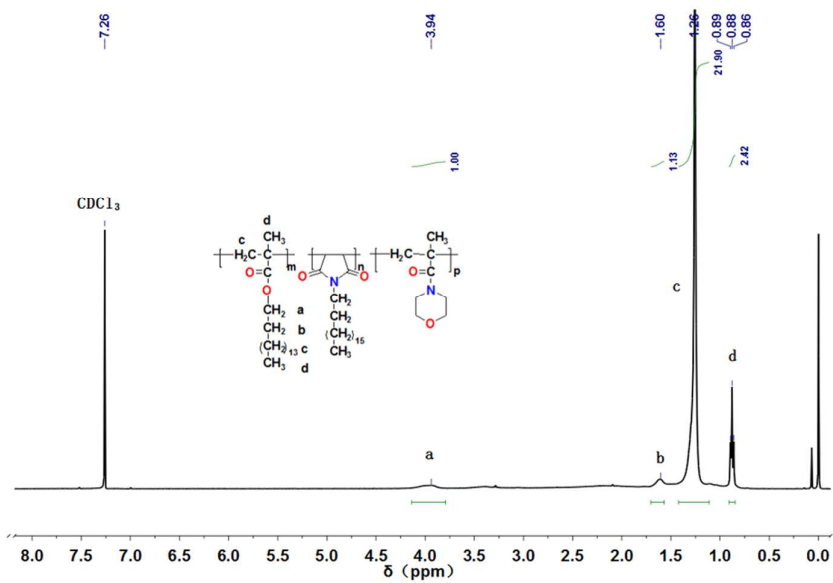


Figure S8. ¹H NMR spectrum (400 MHz) of **C16MC-MA-MCNR₂-A** recorded in CDCl₃ at 298

K

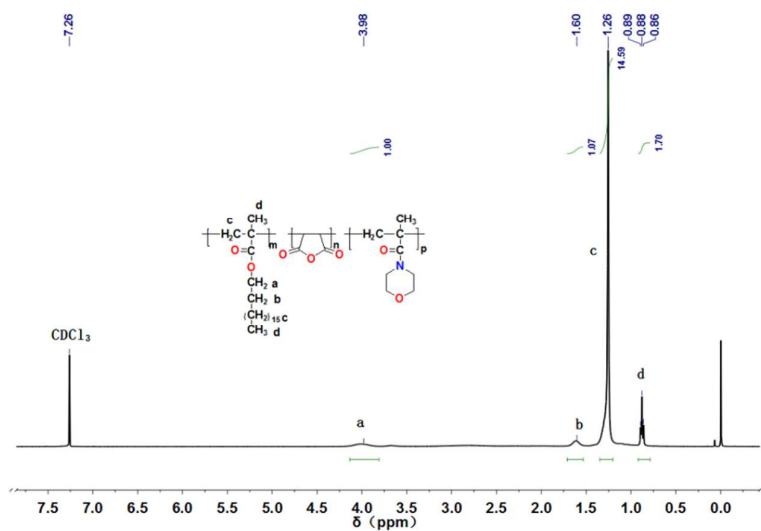


Figure S9. ¹H NMR spectrum (400 MHz) of **C18MC-MA-MCNR₂** recorded in CDCl₃ at 298 K

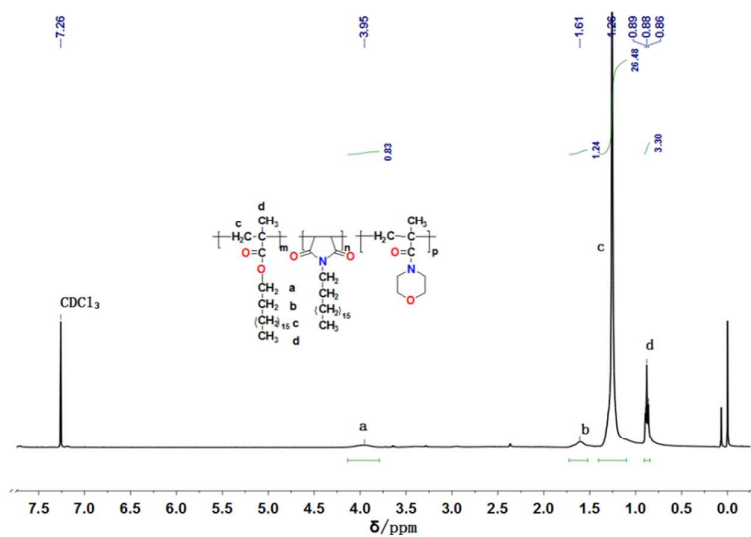


Figure S10. ¹H NMR spectrum (400 MHz) of **C18MC-MA-MCNR₂-A** recorded in CDCl₃ at 298

2. FTIR SPECTRA OF COMPOUNDS AND TERPOLYMERS

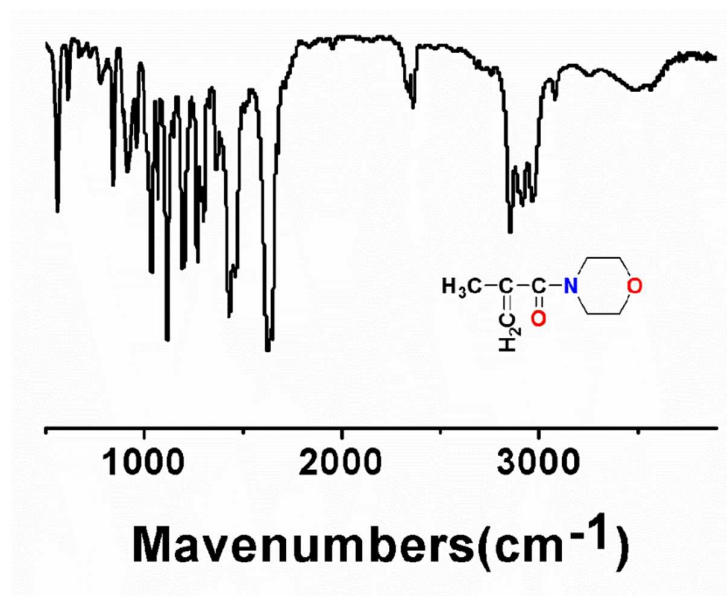


Figure S11. The IR spectra of methyl acrylamide morpholine

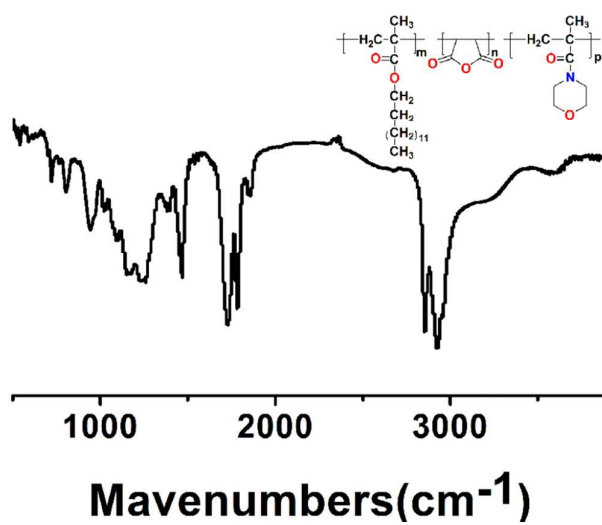


Figure S12. The IR spectra of C14MC-MA-MCNR₂

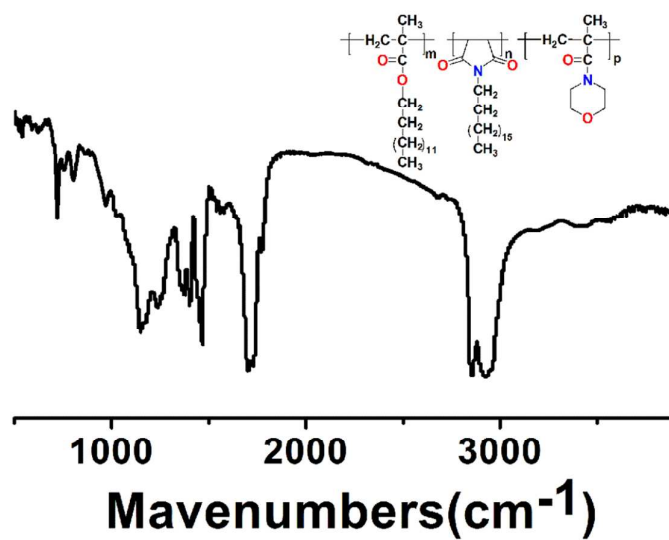


Figure S13. The IR spectra of C14MC- MA -MCNR₂-a

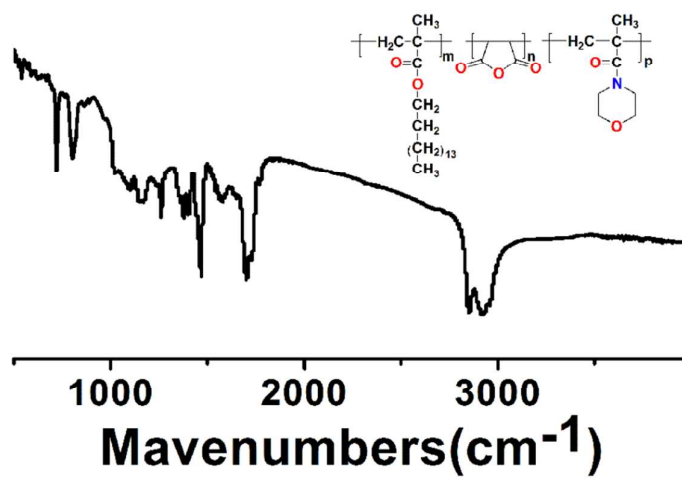


Figure S14. The IR spectra of C16MC- MA -MCNR₂

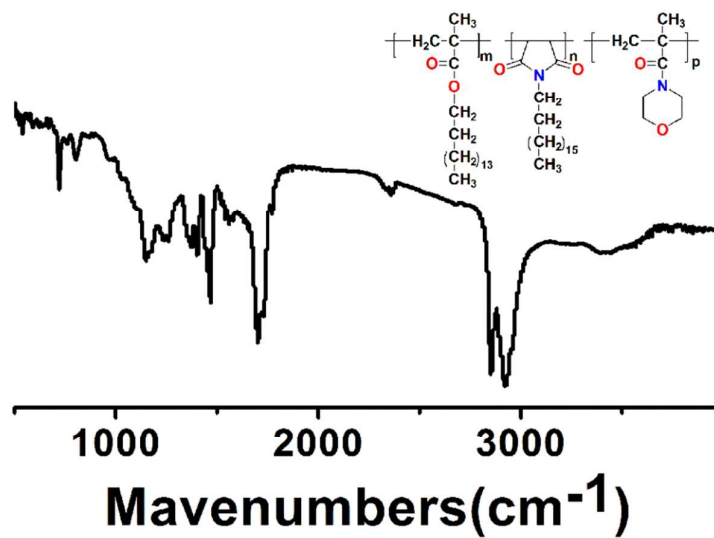


Figure S15. The IR spectra of C16MC- MA -MCNR₂-a

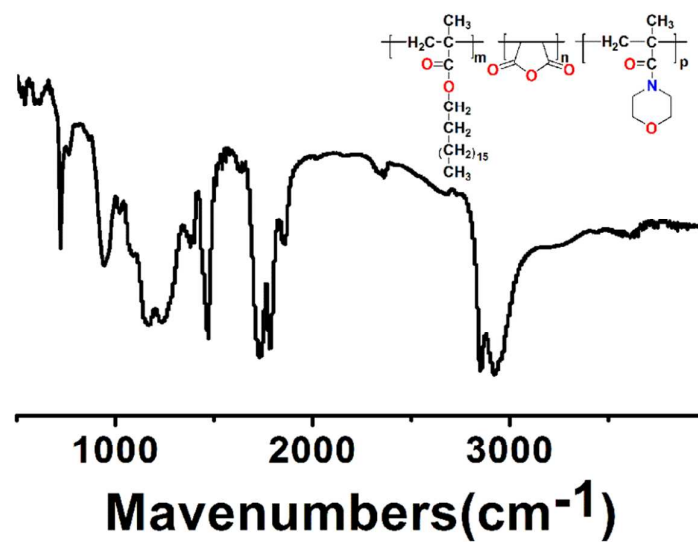


Figure S16. The IR spectra of C18MC- MA -MCNR₂

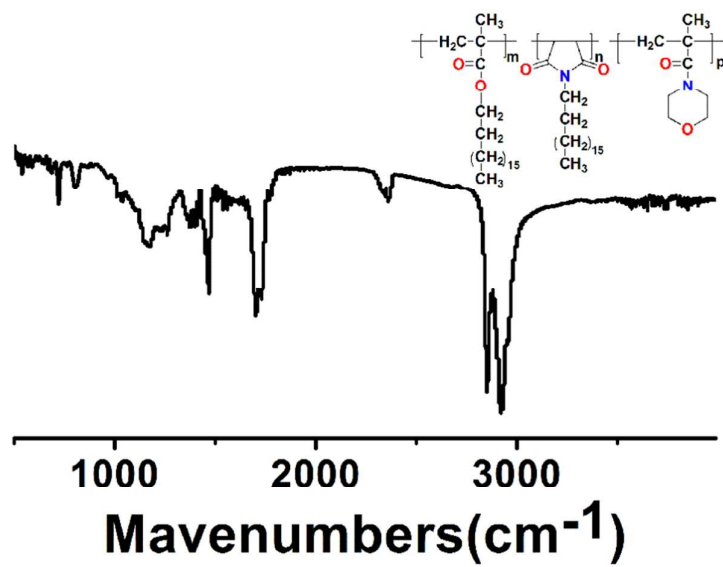


Figure S17. The IR spectra of C18MC- MA -MCNR₂-a