

Instrumentation

The Fourier transform infrared spectrometry (FT-IR) analyses were measured on a Nicolet 5700 spectrophotometer in the range 400-4000 cm^{-1} . ^1H NMR and ^{13}C NMR spectra were recorded on 400 MHz (Bruker) instrument, CDCl_3 (7.26 ppm for ^1H NMR, 77.16 ppm for ^{13}C NMR) was used as a reference [1,2,3].

1. NMR spectra of products

Pour Point Depressant 1 (PPD-1)

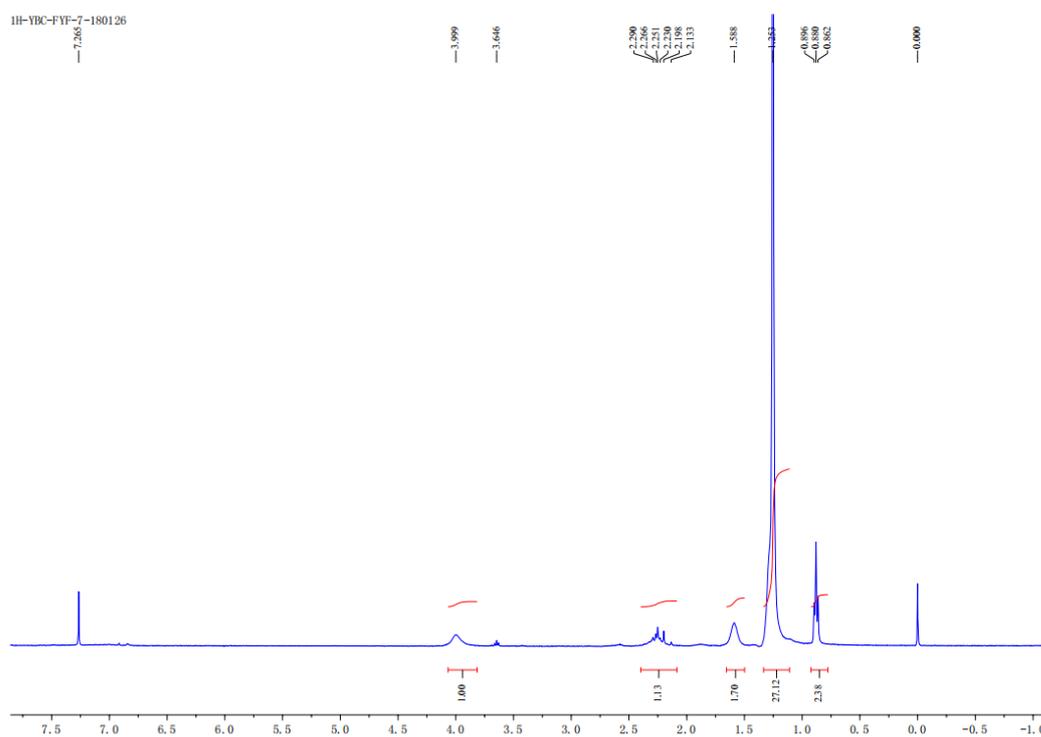


Figure S1. ^1H NMR spectra of product PPD-1

13C-YBC-FYP-7-180126

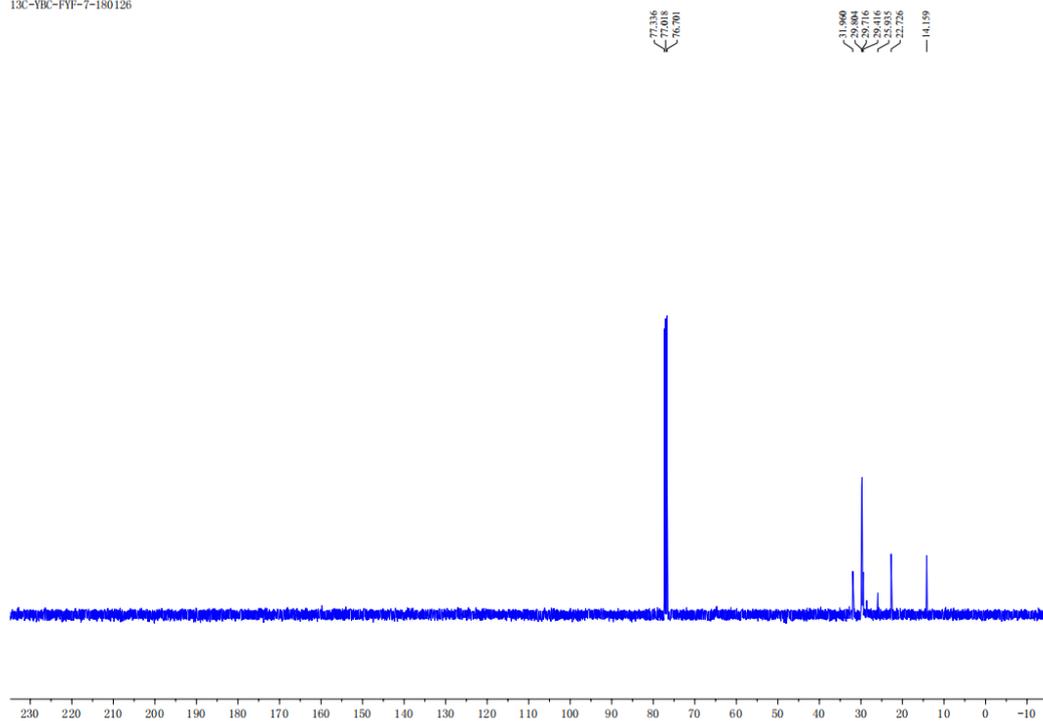


Figure S2. ^{13}C NMR spectra of product PPD-1

Pour Point Depressant 2 (PPD-2)

1H-YBC-FYP-1-180124

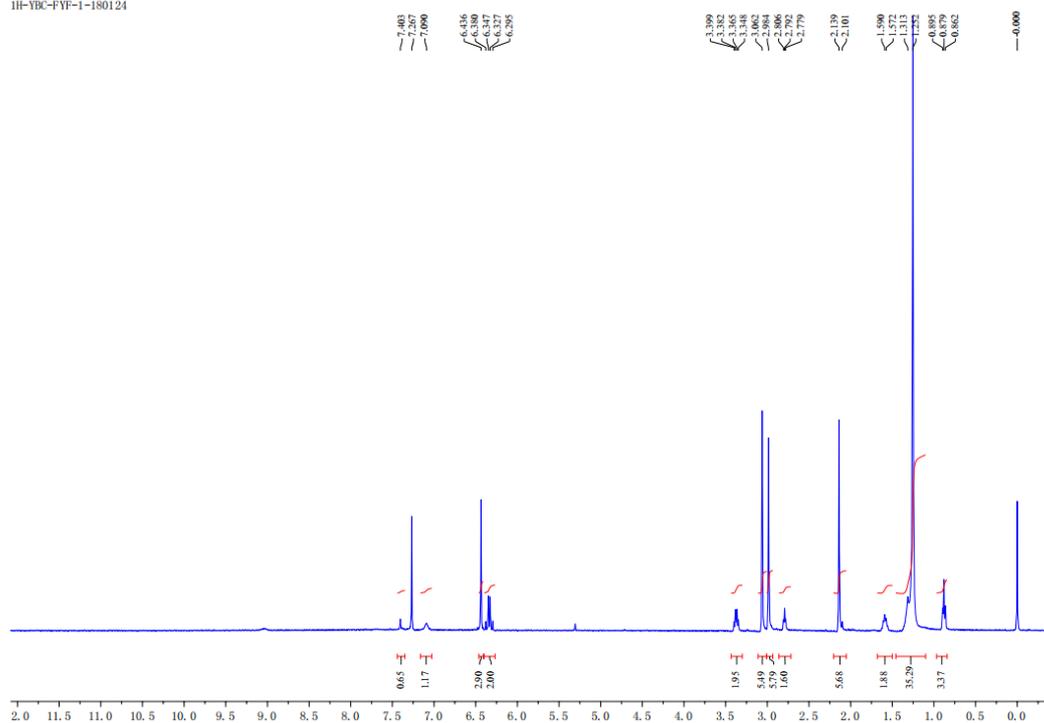


Figure S3. ^1H NMR spectra of product PPD-2

¹³C-YBC-FYF-1-180130

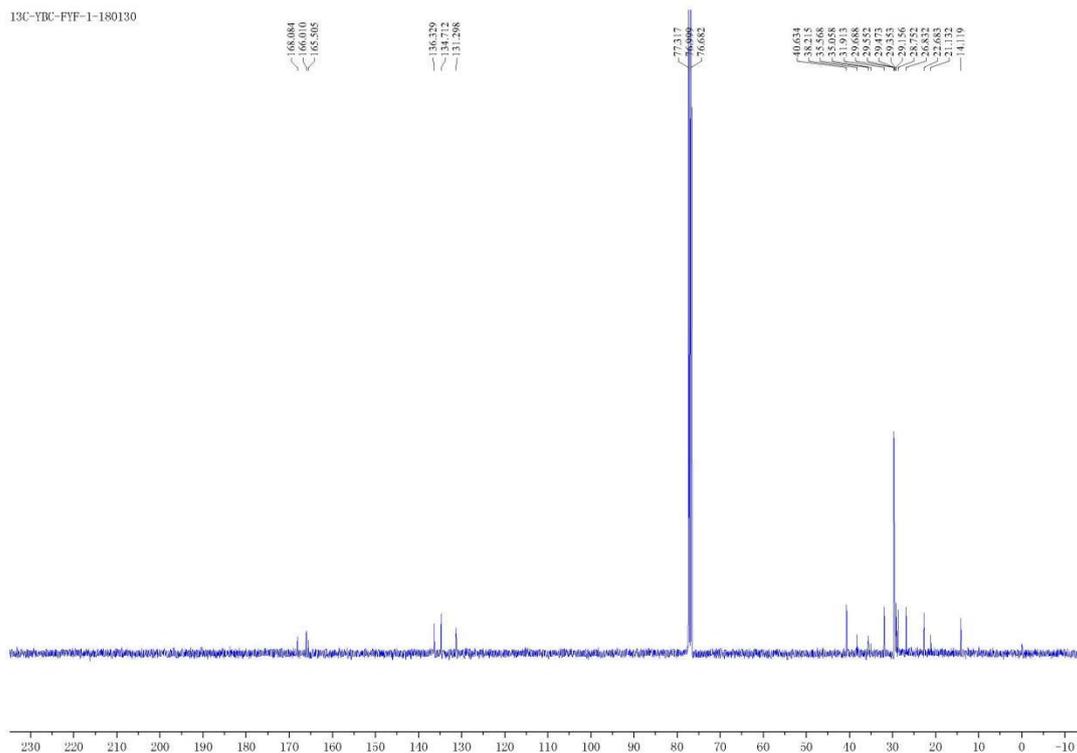


Figure S4. ¹³C NMR spectra of product PPD-2

Pour Point Depressant 3 (PPD-3)

¹H-YBC-FYF-3-180126

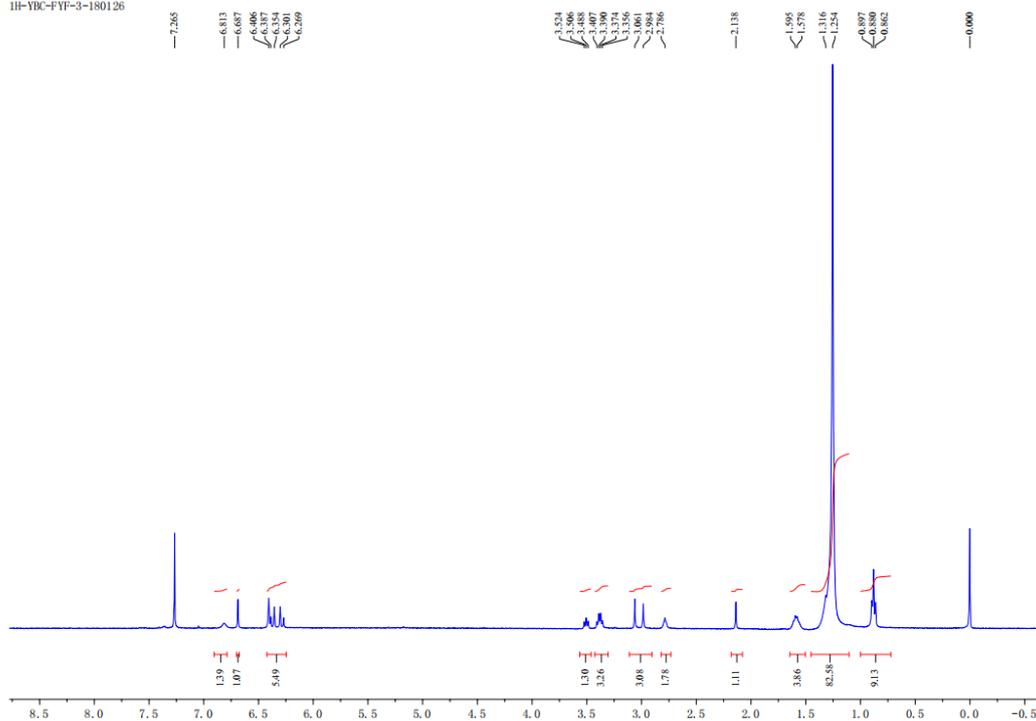


Figure S5. ¹H NMR spectra of product PPD-3

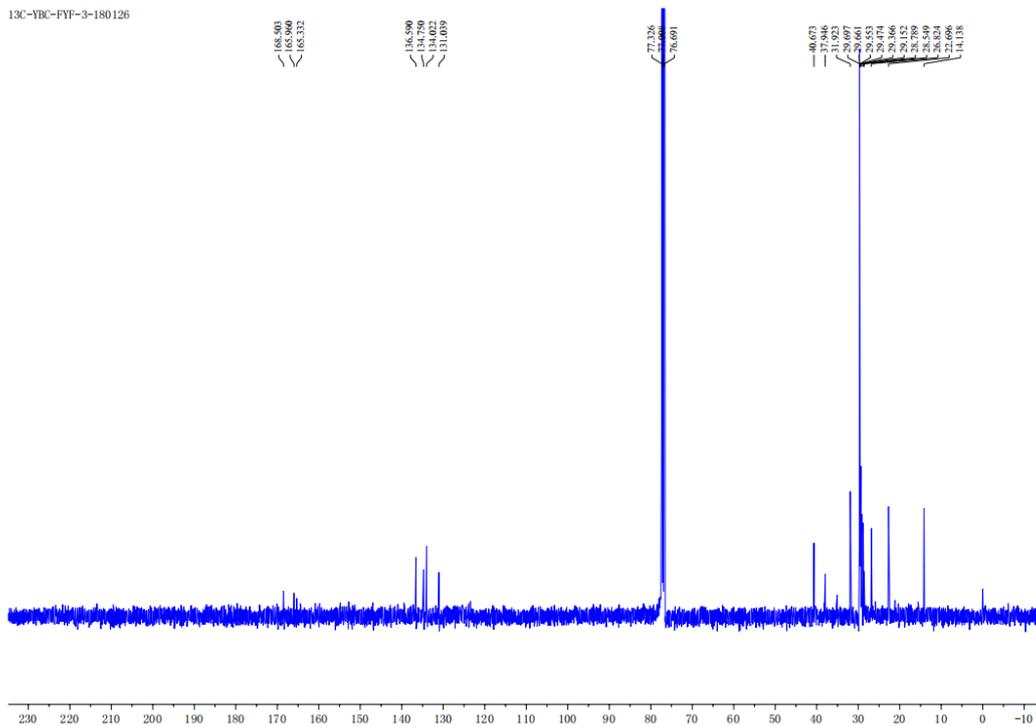


Figure S6. ^{13}C NMR spectra of product PPD-3

Pour Point Depressant 4 (PPD-4)

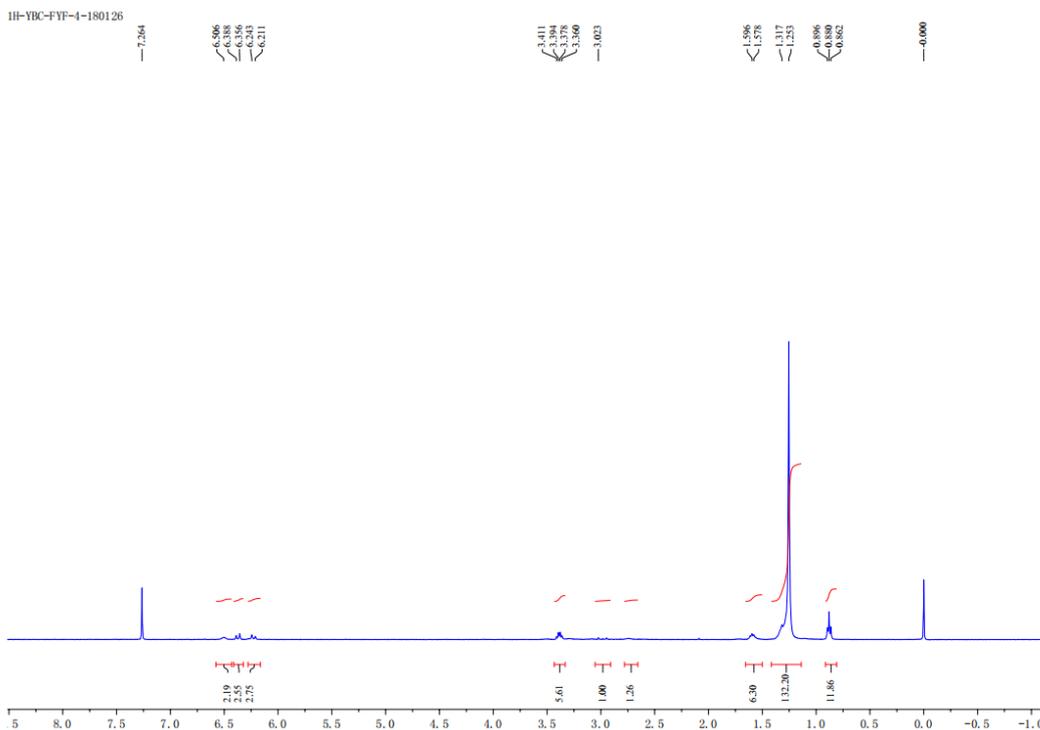


Figure S7. ^1H NMR spectra of product PPD-4

13C-YBC-FYF-4-180126

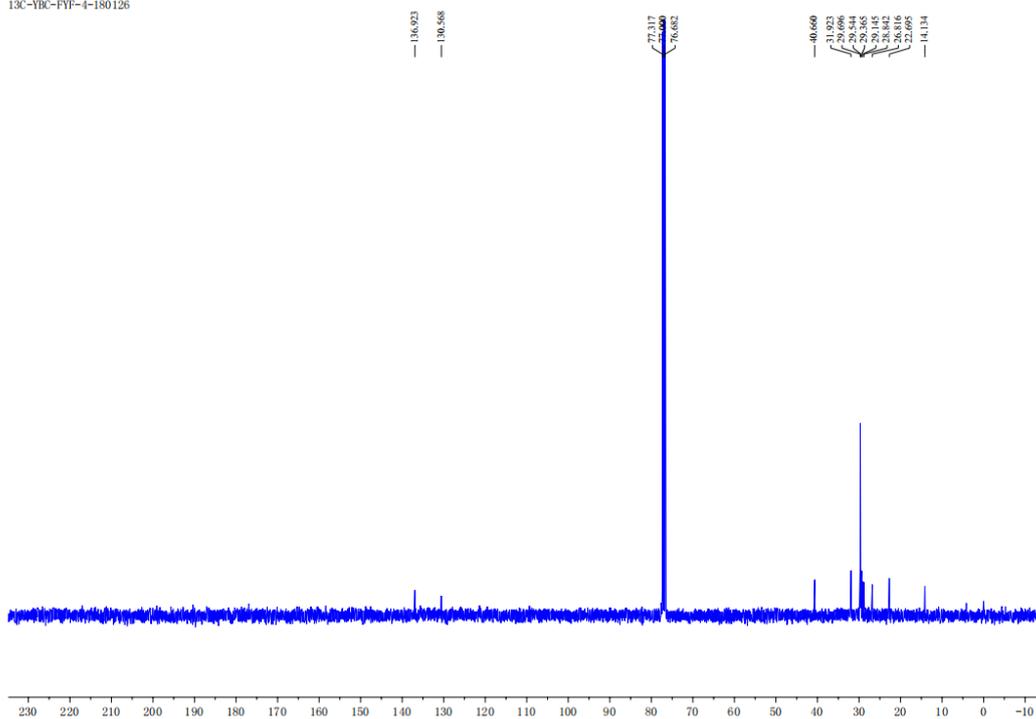


Figure S8 ^{13}C NMR spectra of product PPD-4

Pour Point Depressant 5 (PPD-5)

1H-YBC-FYF-2-180124

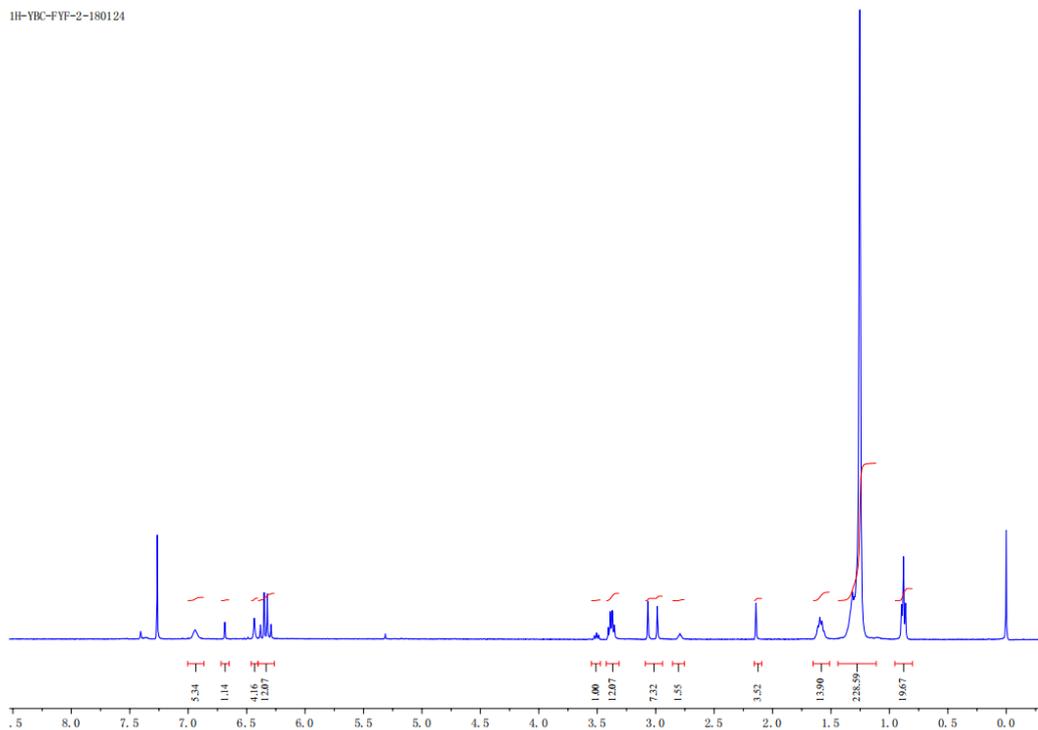


Figure S9. ^1H NMR spectra of product PPD-5

13C-YBC-FYP-2-180124

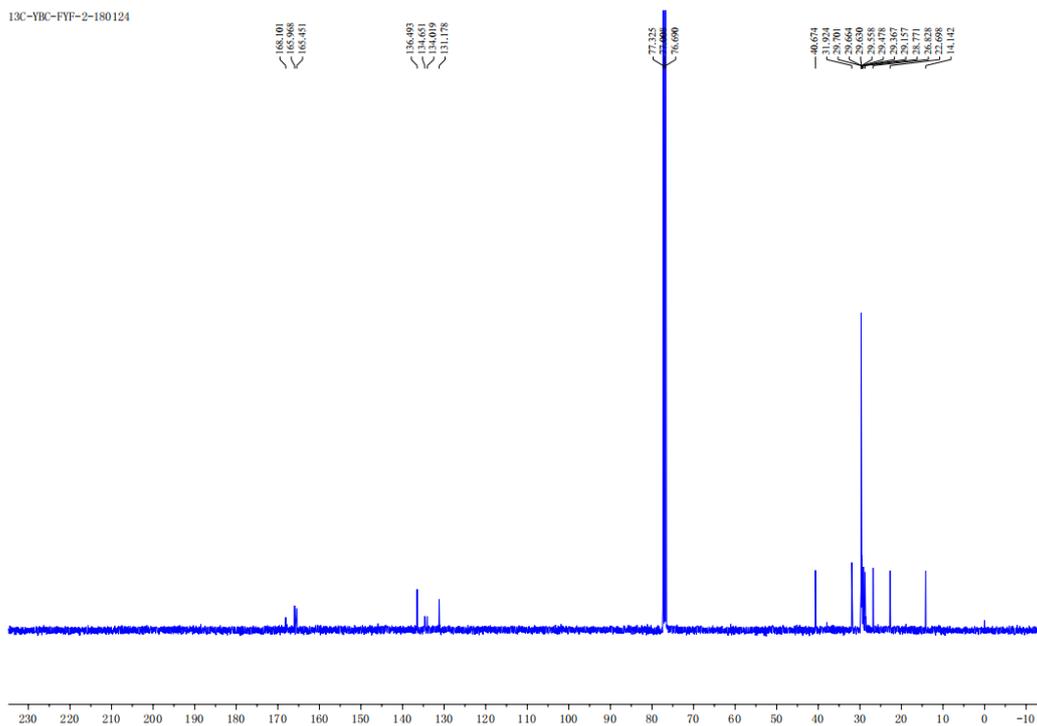


Figure S10. ^{13}C NMR spectra of product PPD-5

Pour Point Depressant 6 (PPD-6)

1H-YBC-FYP-6-180124

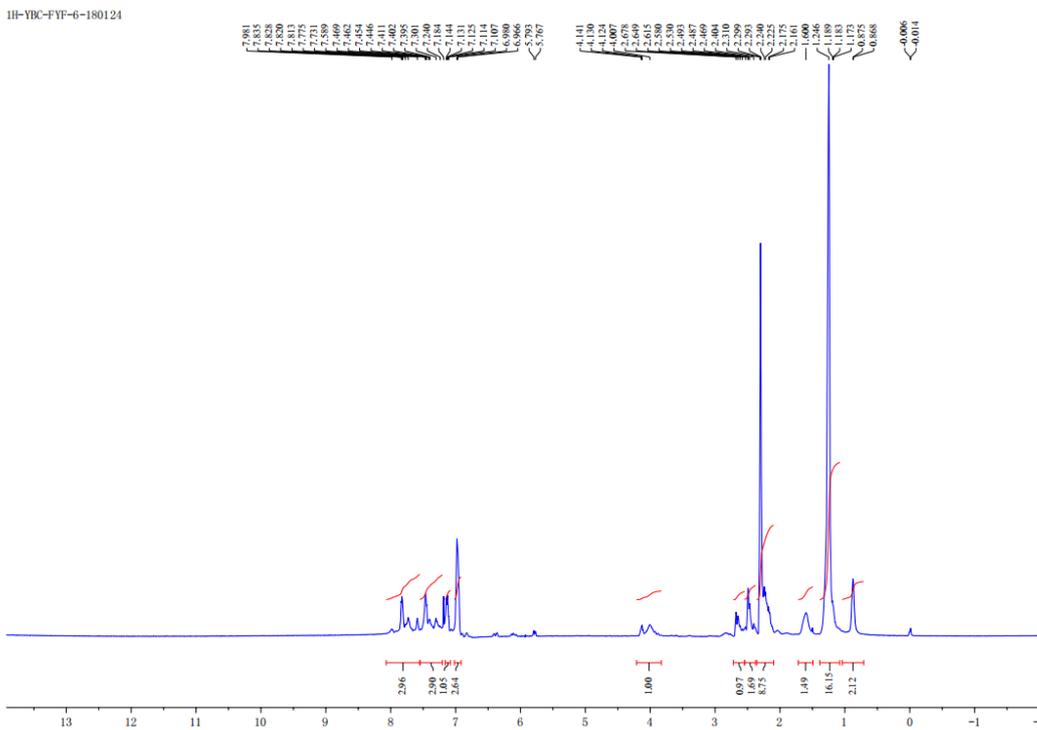


Figure S11. ^1H NMR spectra of product PPD-6

13C-YBC-FYT-6-180124

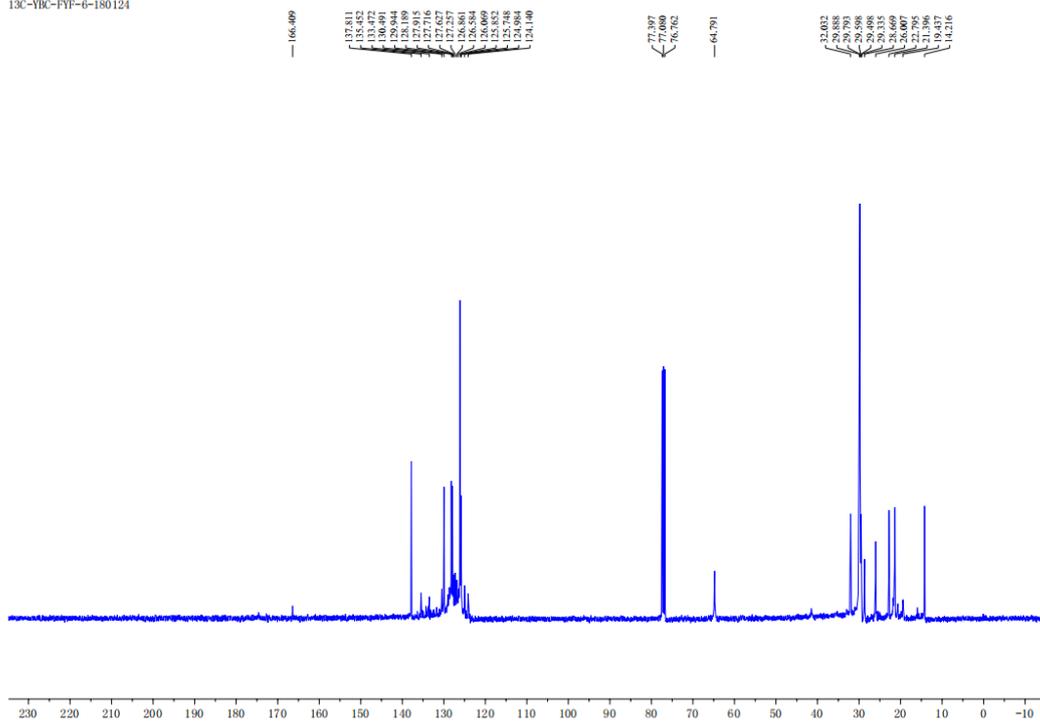


Figure S12. ¹³C NMR spectra of product PPD-6

Pour Point Depressant 7 (PPD-7)

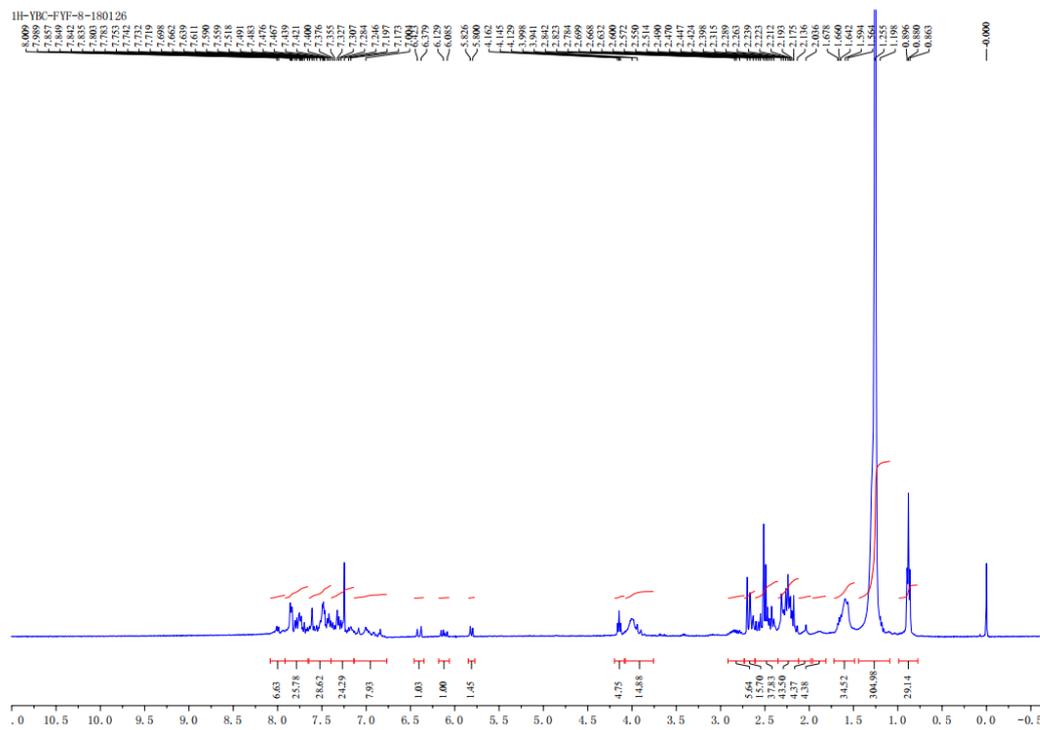


Figure S13. ¹H NMR spectra of product PPD-7

13C-YBC-FYP-8-180126

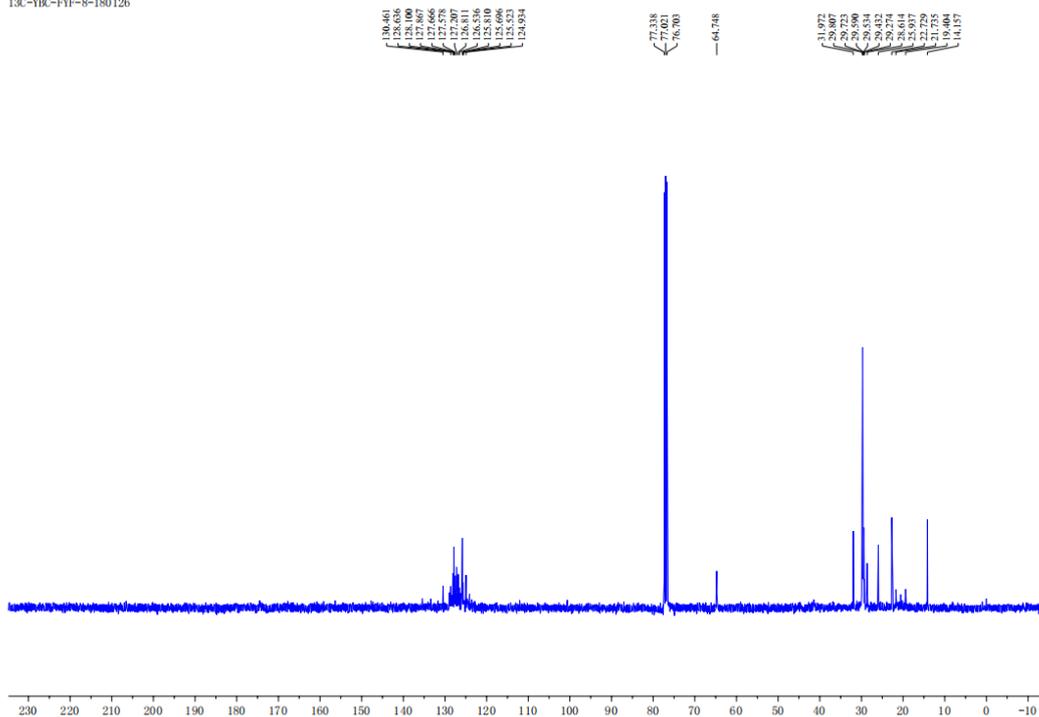


Figure S14. ^{13}C NMR spectra of product PPD-7

Pour Point Depressant 8 (PPD-8)

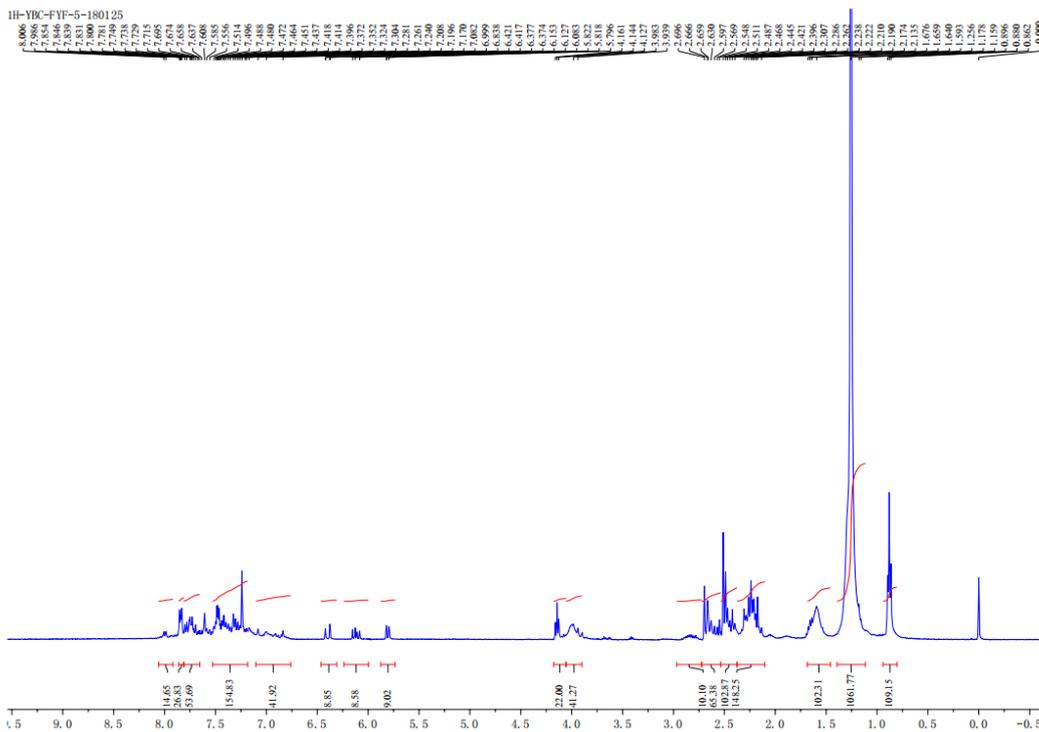


Figure S15. ^1H NMR spectra of product PPD-8

13C-YBC-PVF-5-180124

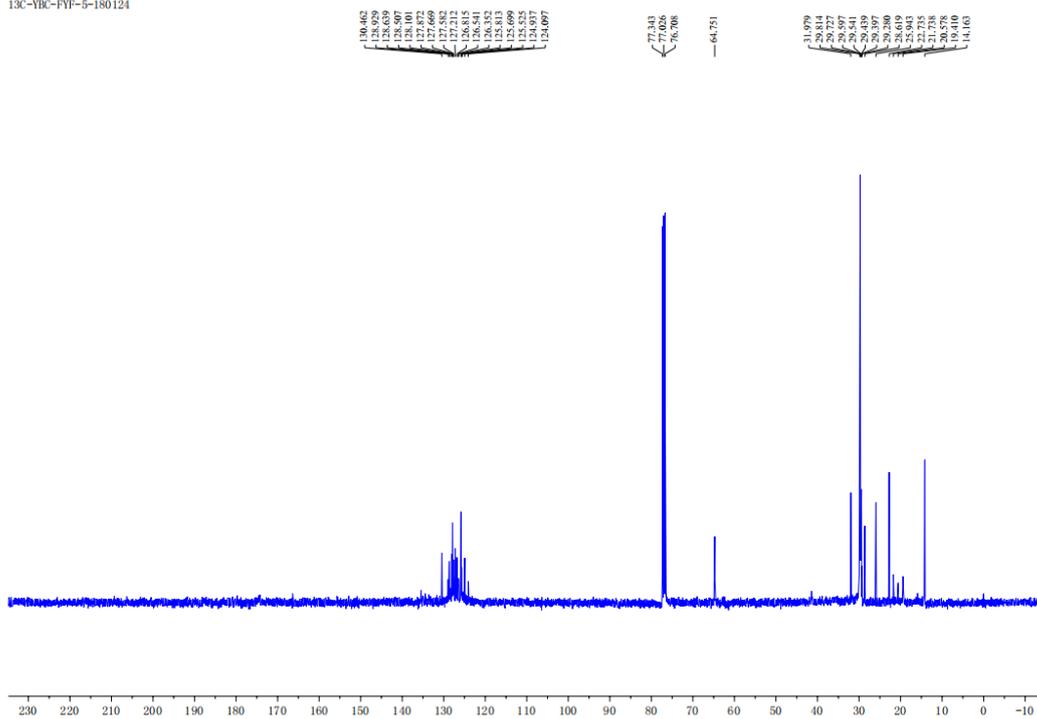


Figure S16. ^{13}C NMR spectra of product PPD-8

2. FTIR spectra of products

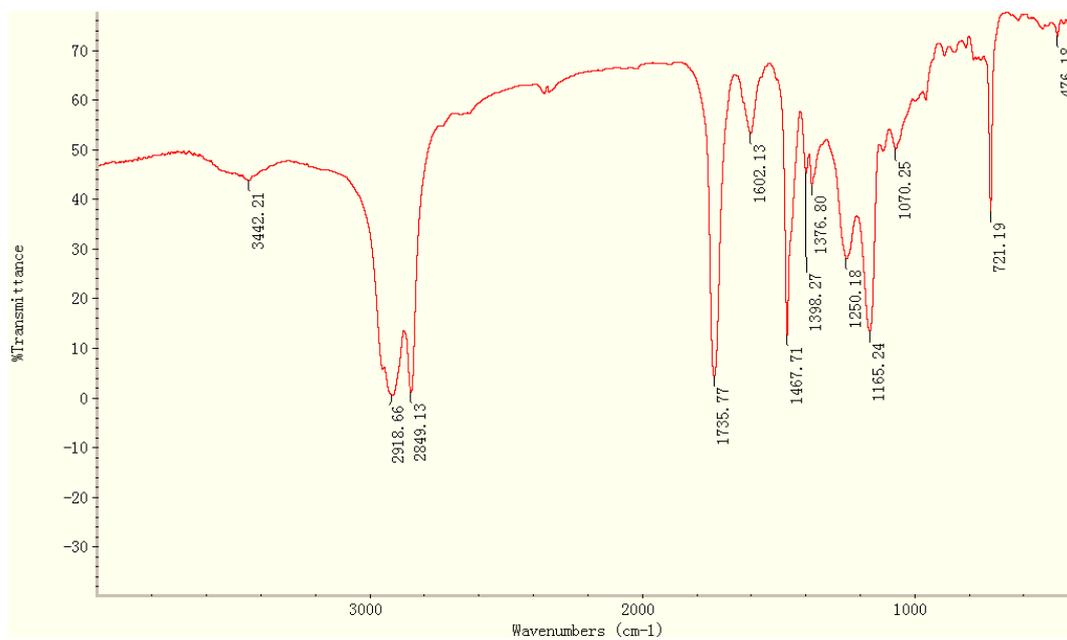


Figure S17. FTIR spectra of PPD-1

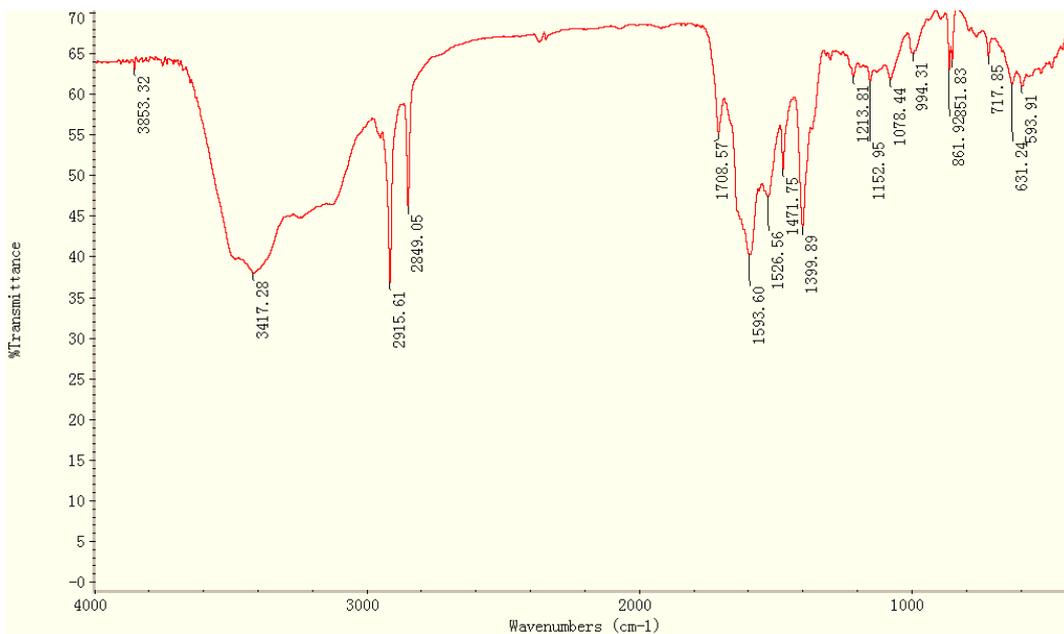


Figure S18. FTIR spectra of PPD-2

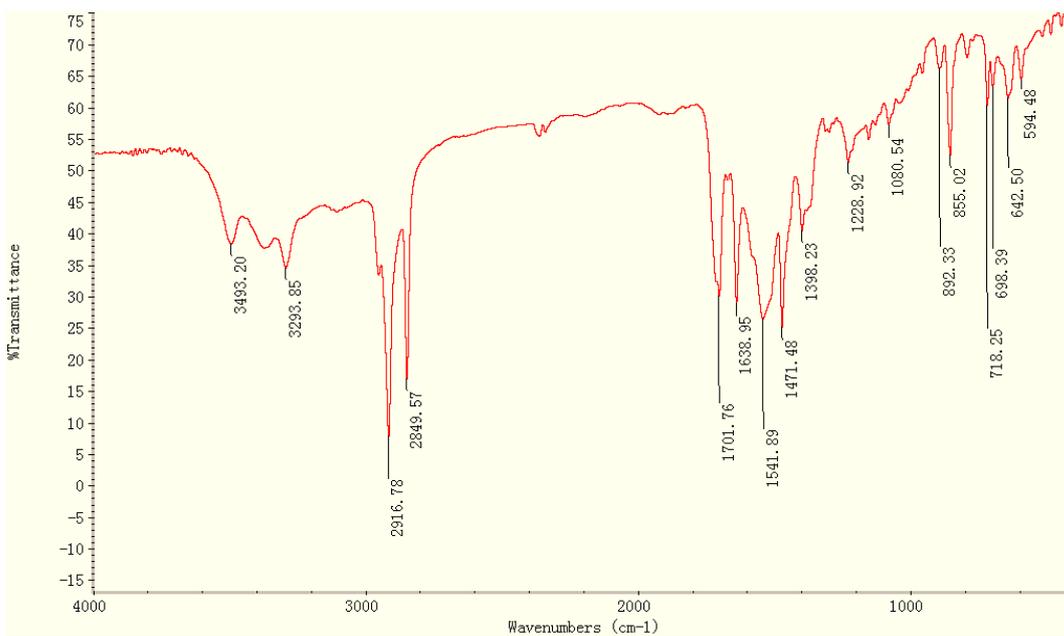


Figure S19. FTIR spectra of PPD-3

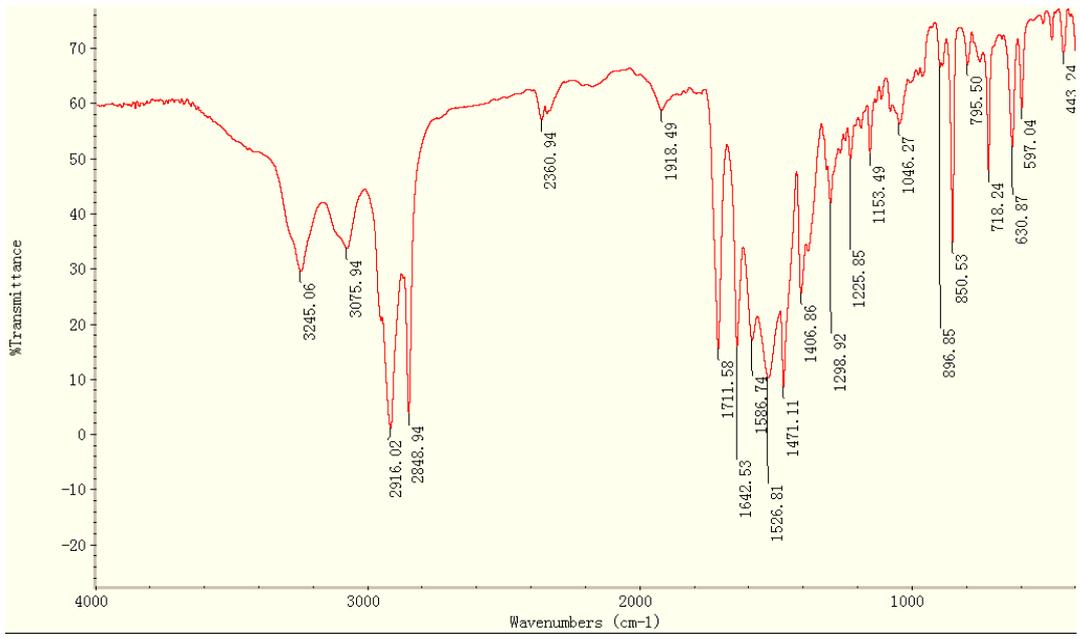


Figure S20. FTIR spectra of PPD-4

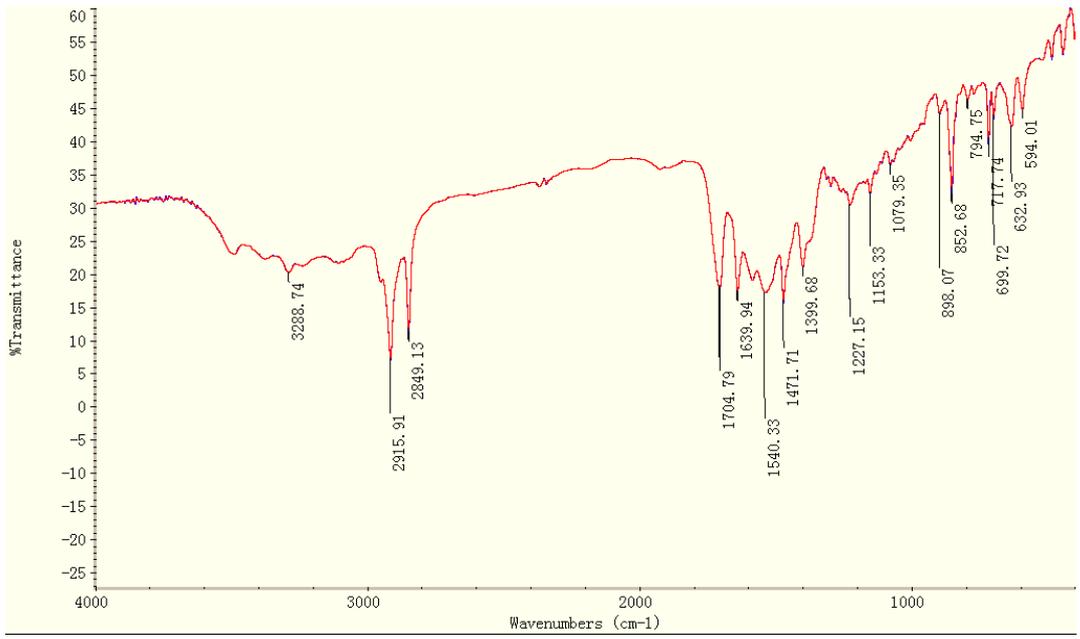


Figure S21. FTIR spectra of PPD-5

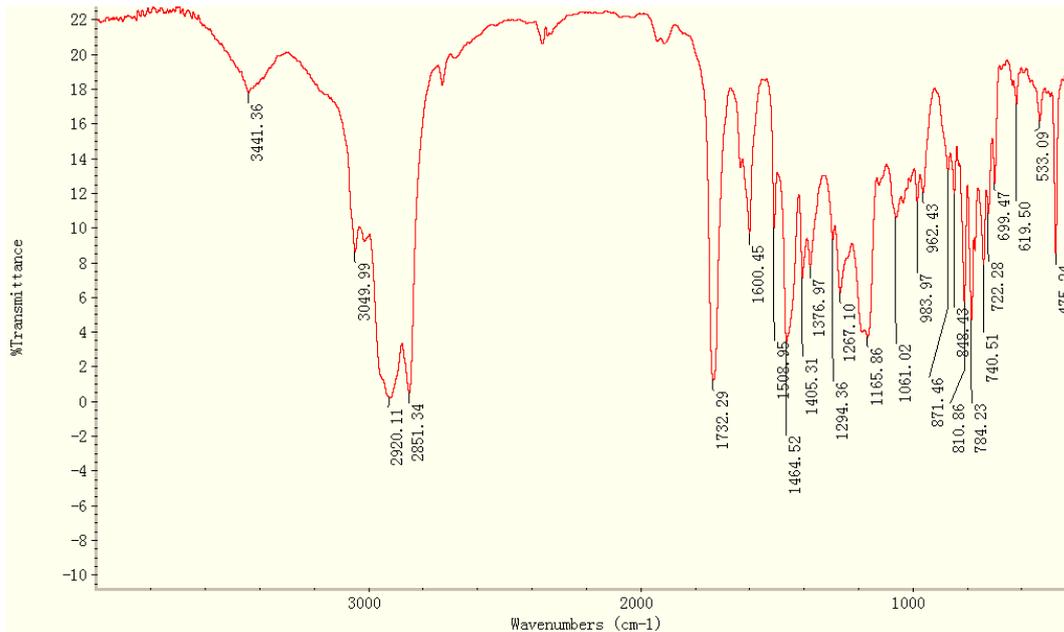


Figure S22. FTIR spectra of PPD-6

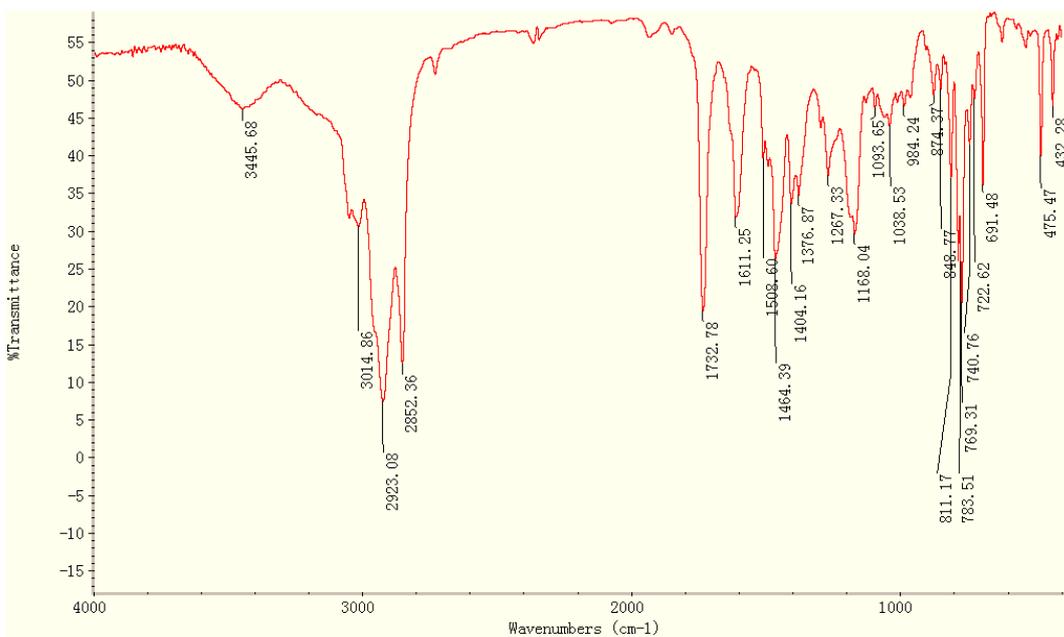


Figure S23. FTIR spectra of PPD-7

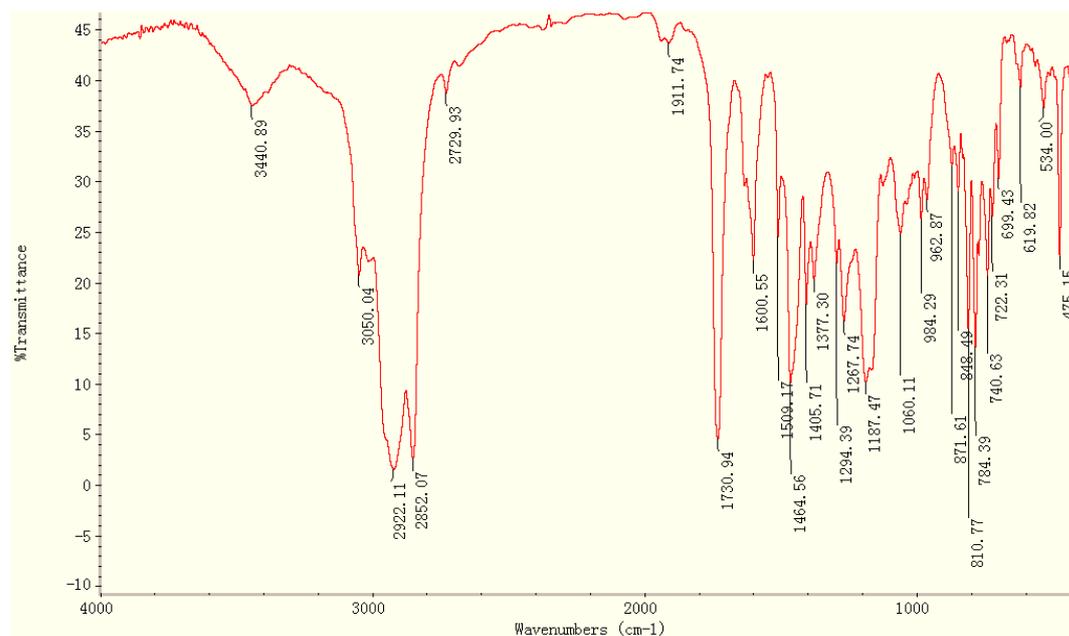


Figure S24. FTIR spectra of PPD-8

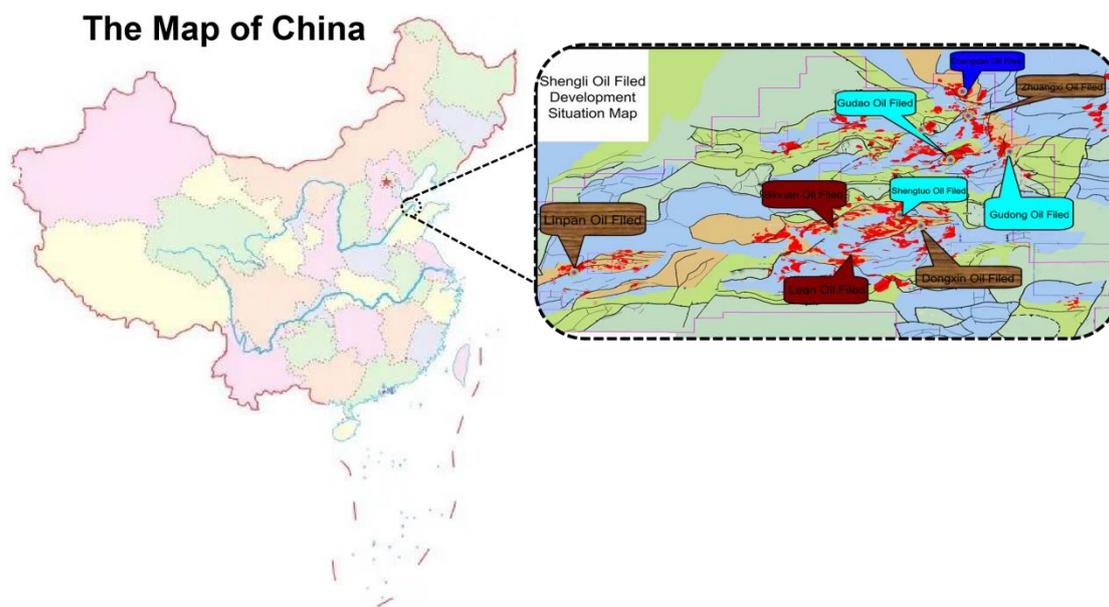


Figure S25. The map locating the Shengli oil field in China.

References

1. Xie, M.; Chen, F.; Liu. Synthesis and evaluation of benzyl methacrylate-methacrylate copolymers as pour point depressant in diesel fuel. *Fuel*. **2019**, *255*, 115880.
2. Fang, L.; Zhang, X.; Ma, J. Investigation into a pour point depressant for Shengli crude oil. *Industrial & engineering chemistry research*. **2012**, *51*(36), 11605-11612.
3. Pucko, I.; Racar, M.; Faraguna, F. Synthesis, characterization, and performance of alkyl methacrylates and tert-butylaminoethyl methacrylate tetra polymers as pour point depressants for diesel Influence of polymer composition and molecular weight. *Fuel*. **2022**, *324*, 124821.