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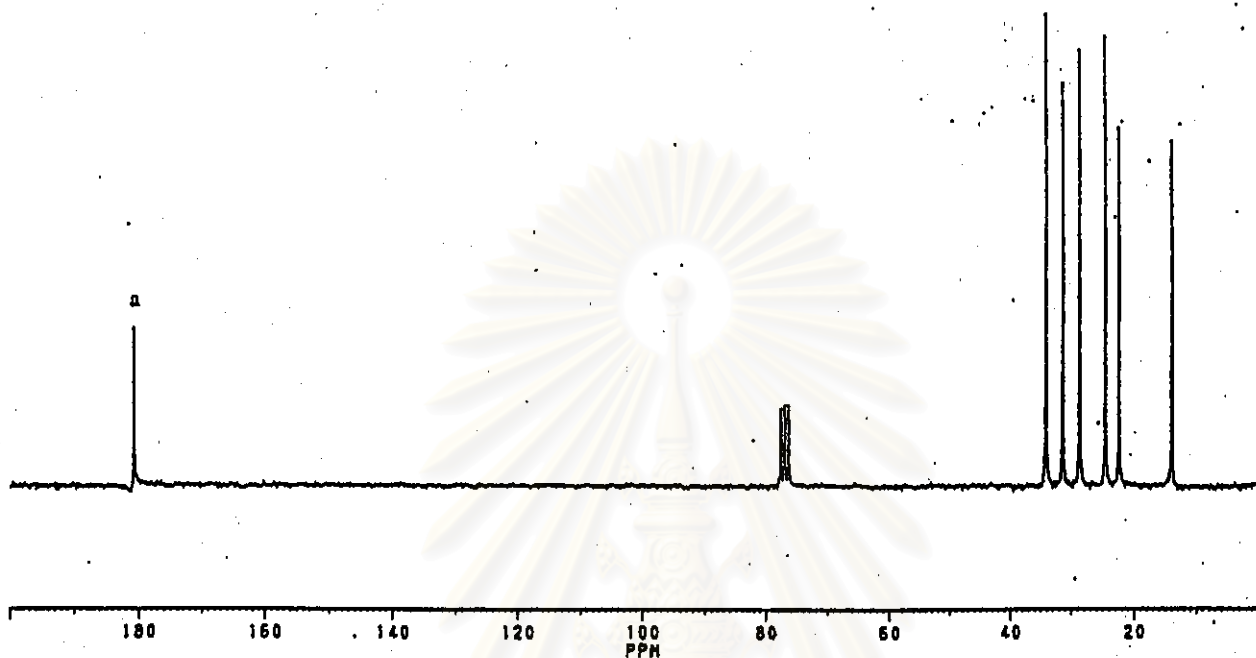
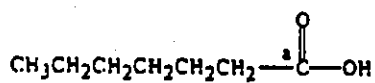


Figure A1 : ^{13}C NMR (CDCl_3) spectrum of heptanoic acid

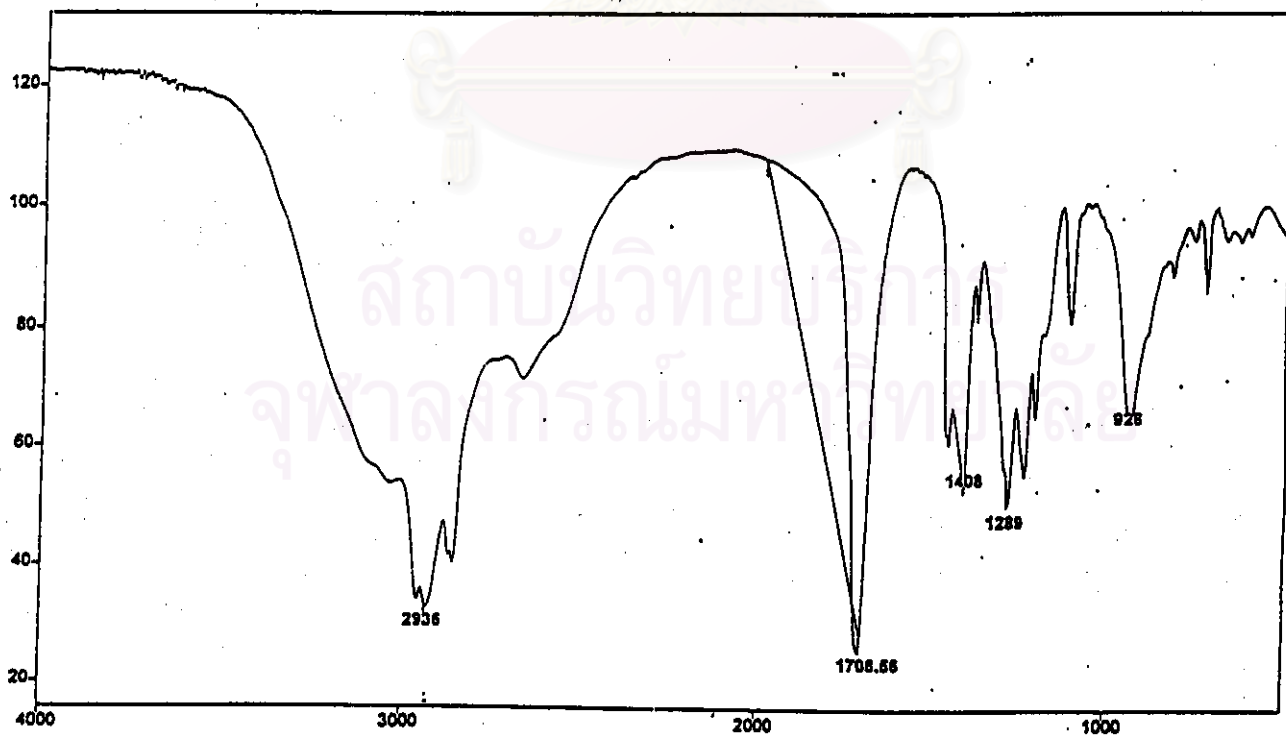


Figure B1 : IR spectrum of heptanoic acid

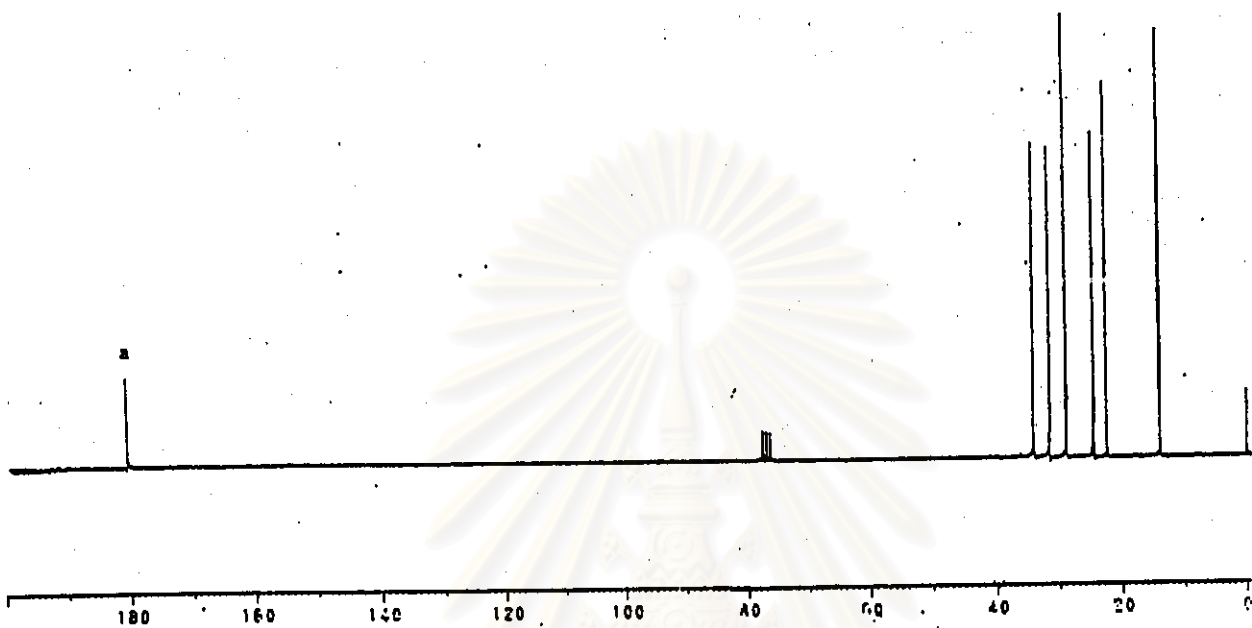
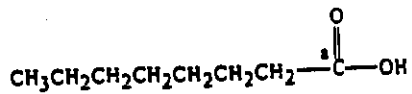


Figure A2 : ^{13}C NMR (CDCl_3) spectrum of octanoic acid

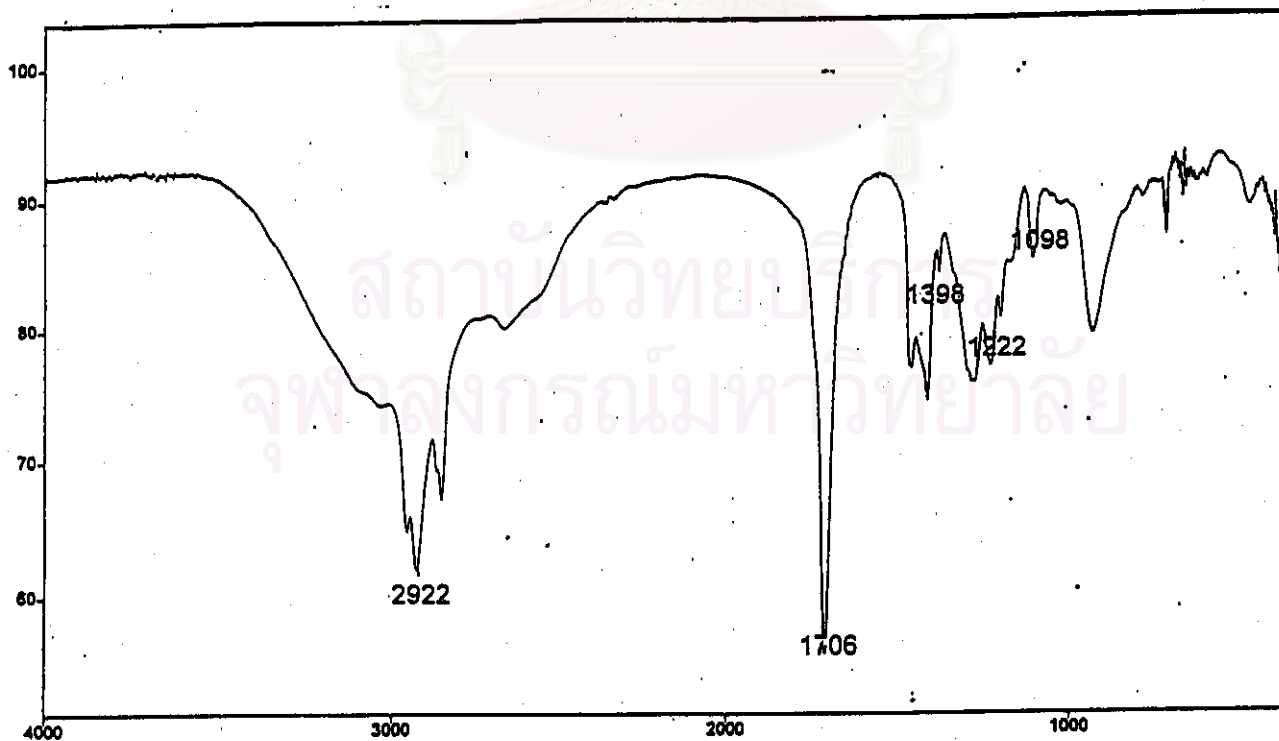


Figure B2 : IR spectrum of octanoic acid

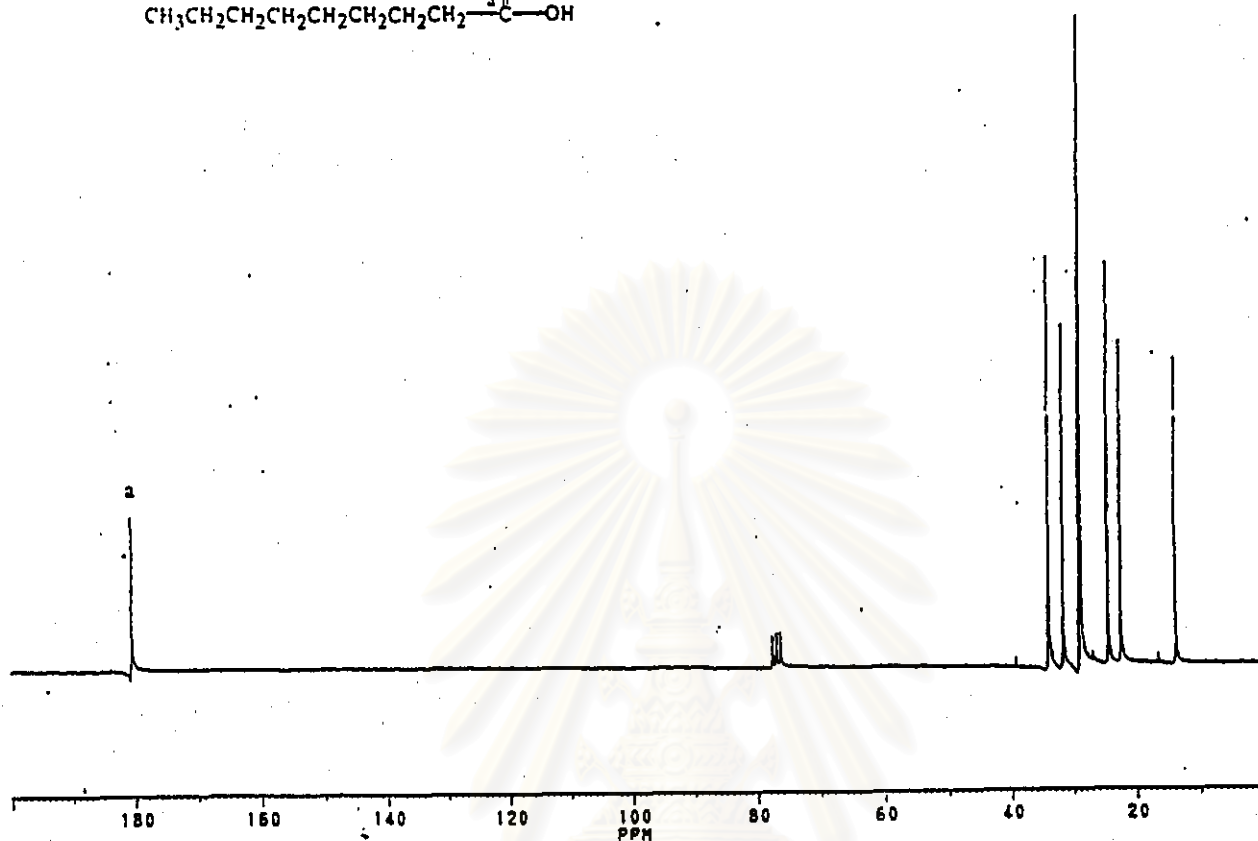
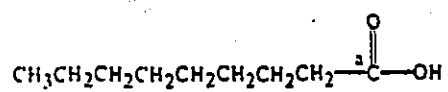


Figure A3 : ^{13}C NMR (CDCl_3) spectrum of nonanoic acid

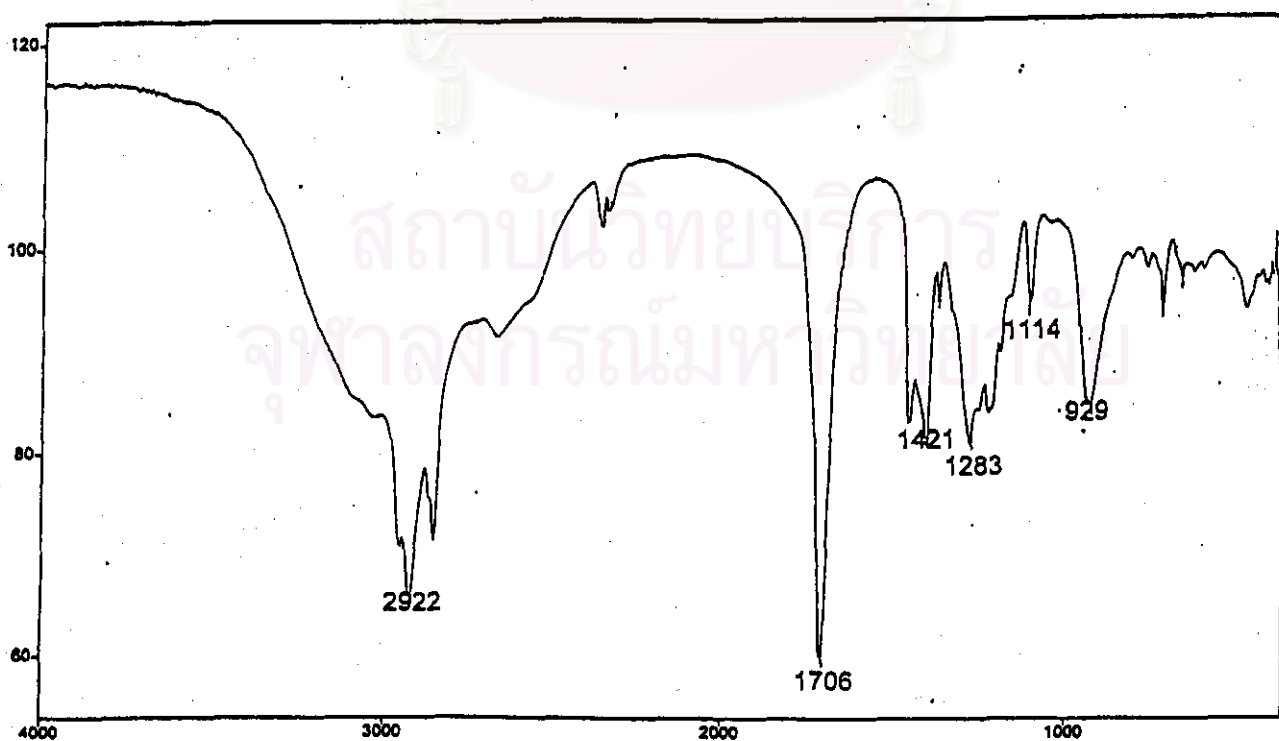


Figure B3 : IR spectrum of nonanoic acid

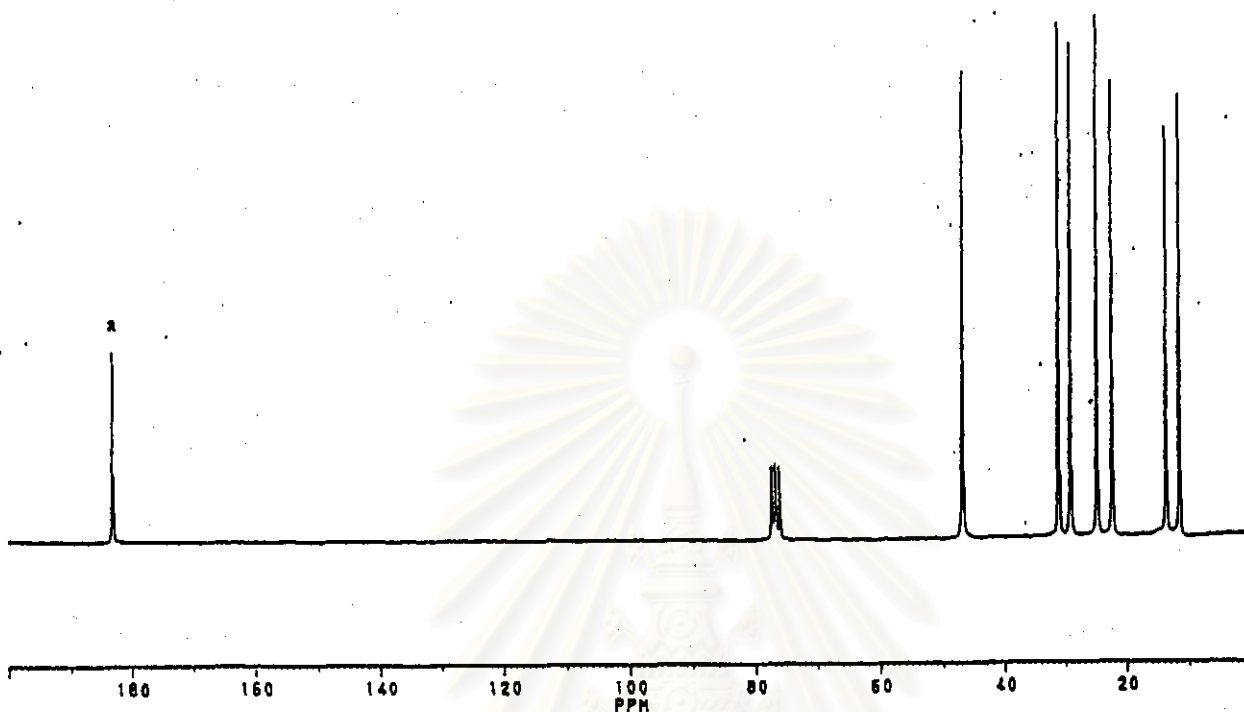
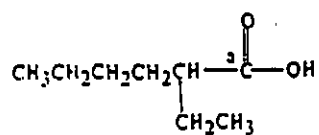


Figure A4 : ^{13}C NMR (CDCl_3) spectrum of 2-ethyl-hexanoic acid

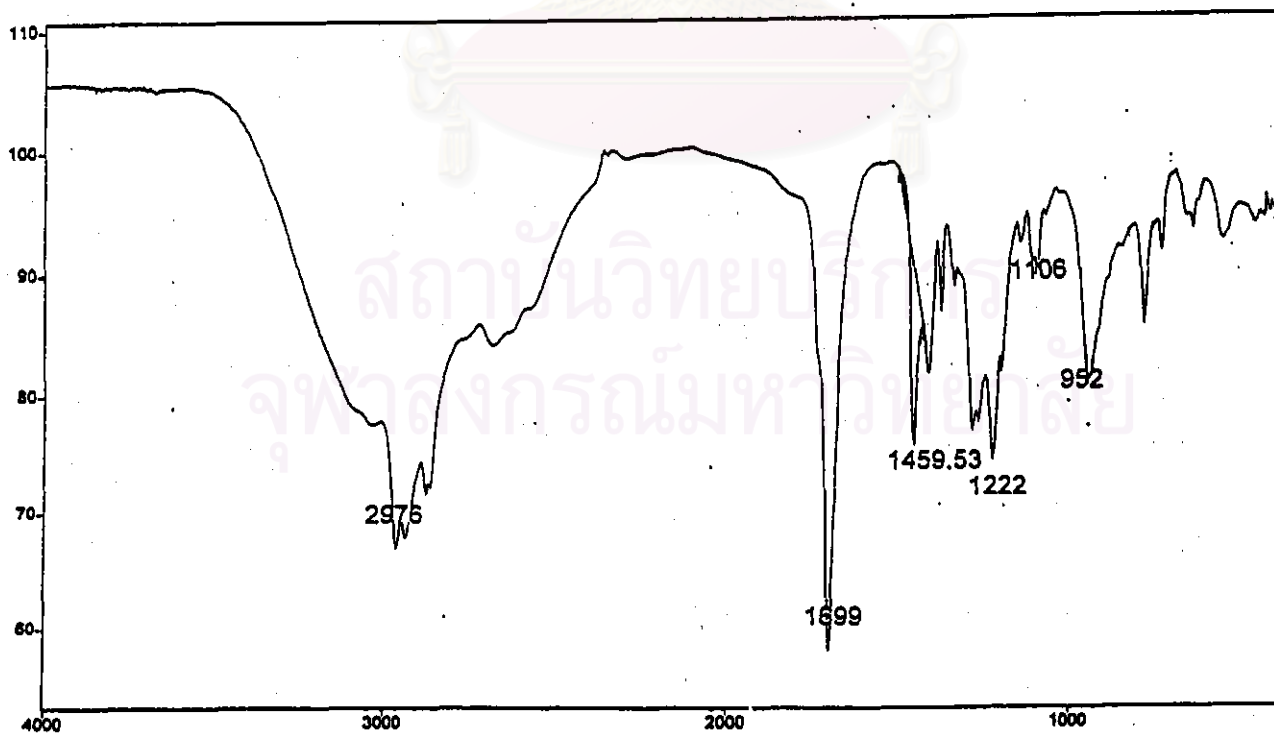


Figure B4 : IR spectrum of 2-ethyl-hexanoic acid

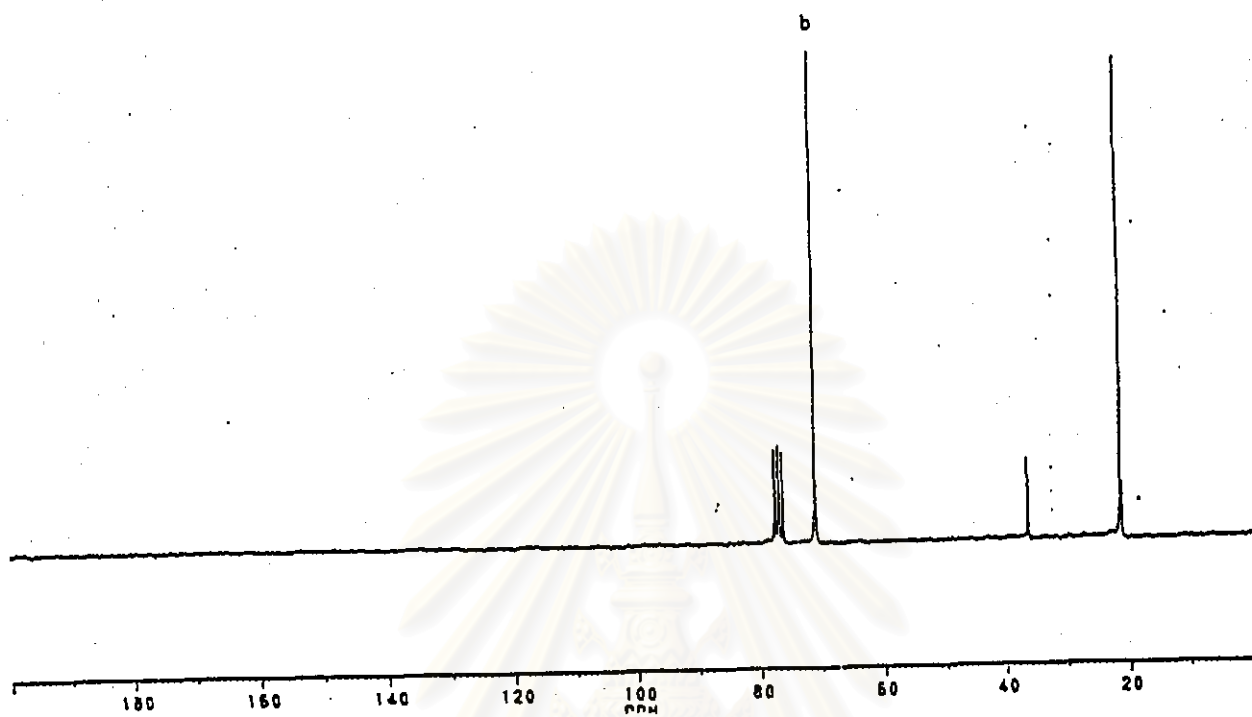
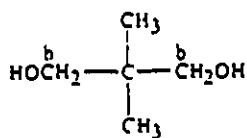


Figure A5 : ^{13}C NMR (CDCl_3) spectrum of neopentyl glycol

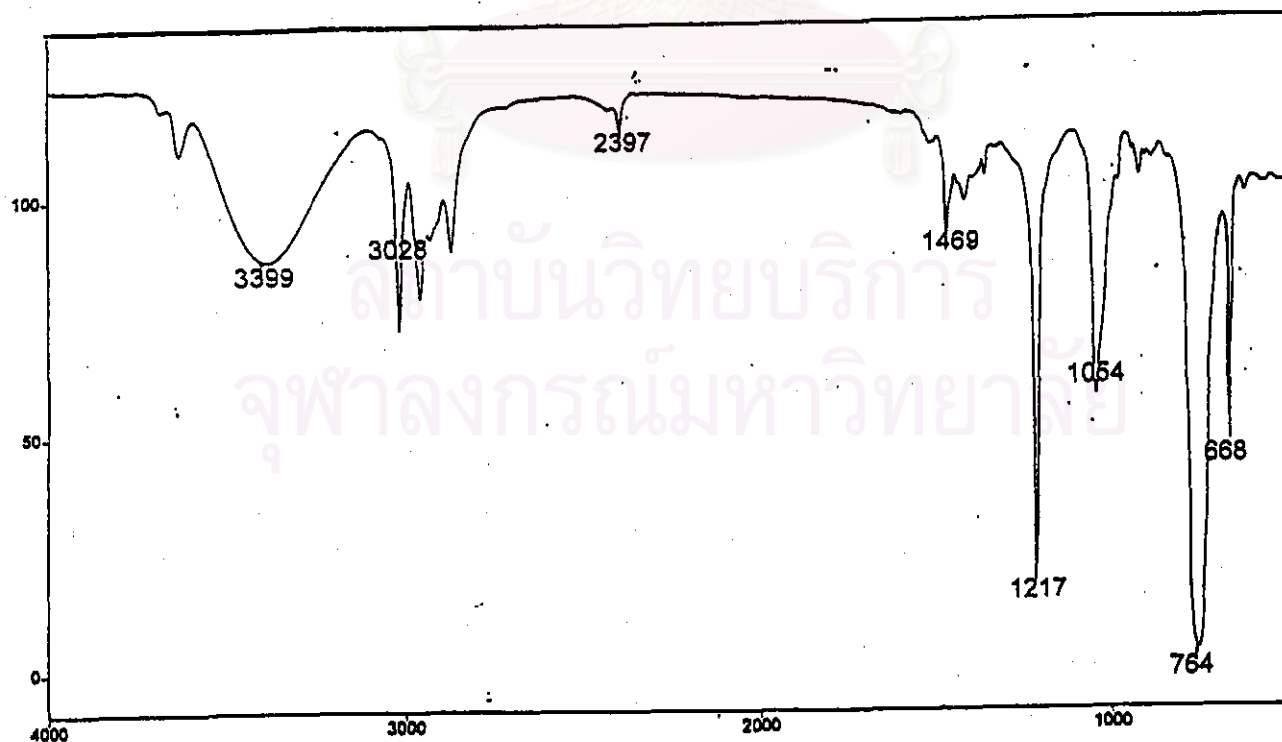


Figure B5 : IR spectrum of neopentyl glycol

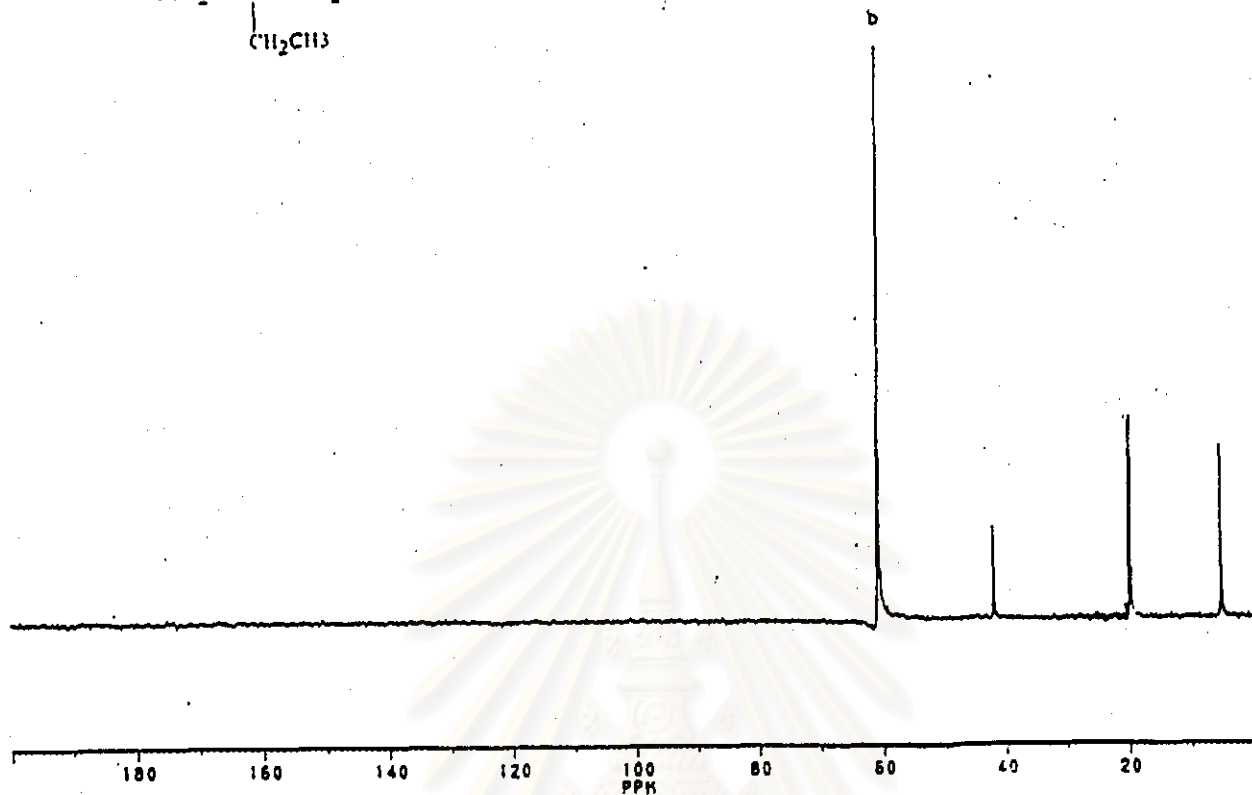
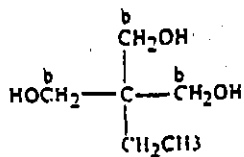


Figure A6 : ^{13}C NMR (D_2O) spectrum of trimethylolpropane

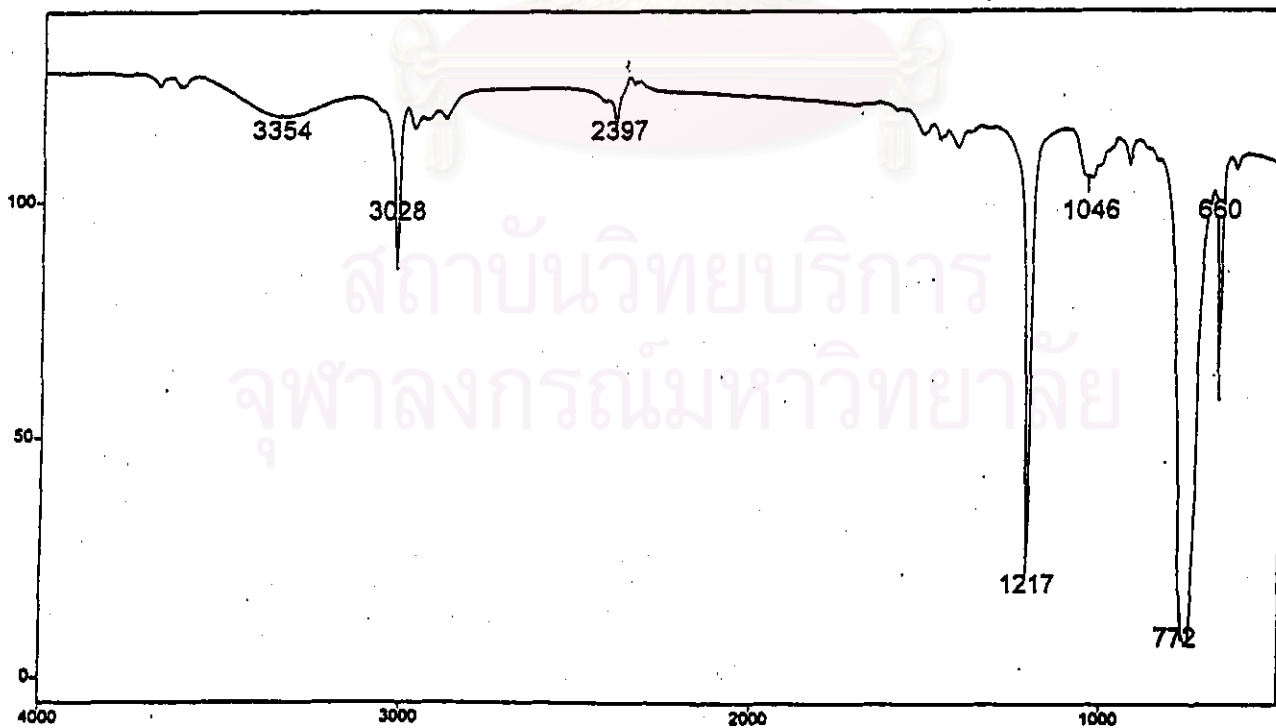


Figure B6 : IR spectrum of trimethylolpropane

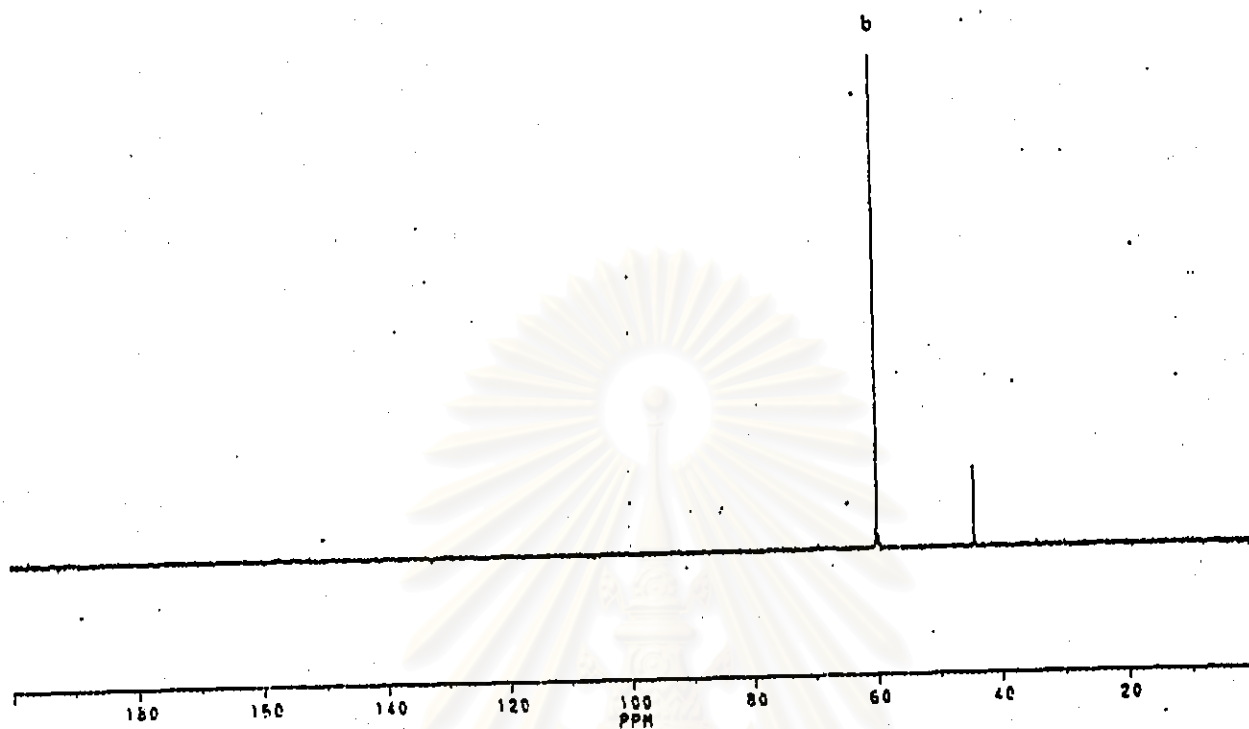
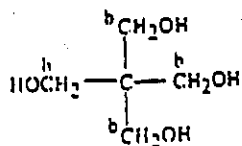


Figure A7 : ^{13}C NMR (D_2O) spectrum of pentaerythritol

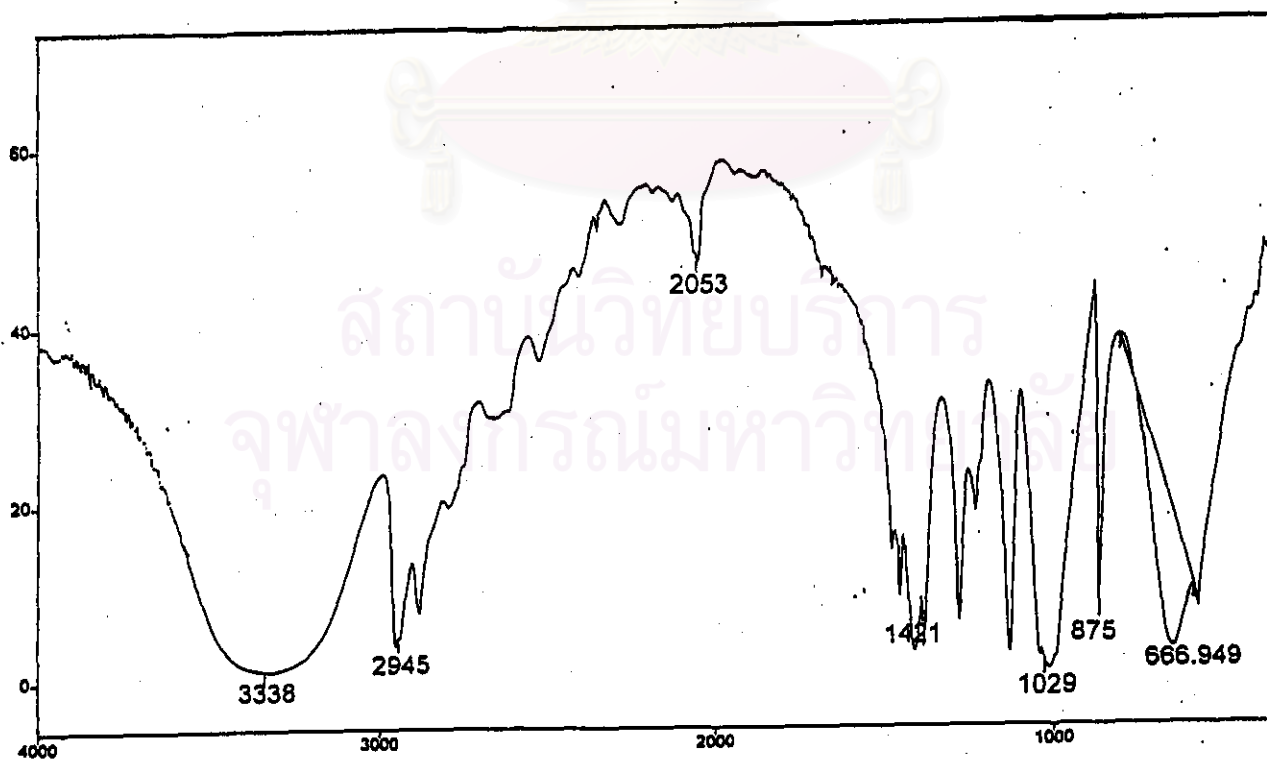


Figure B7 : IR spectrum of pentaerythritol

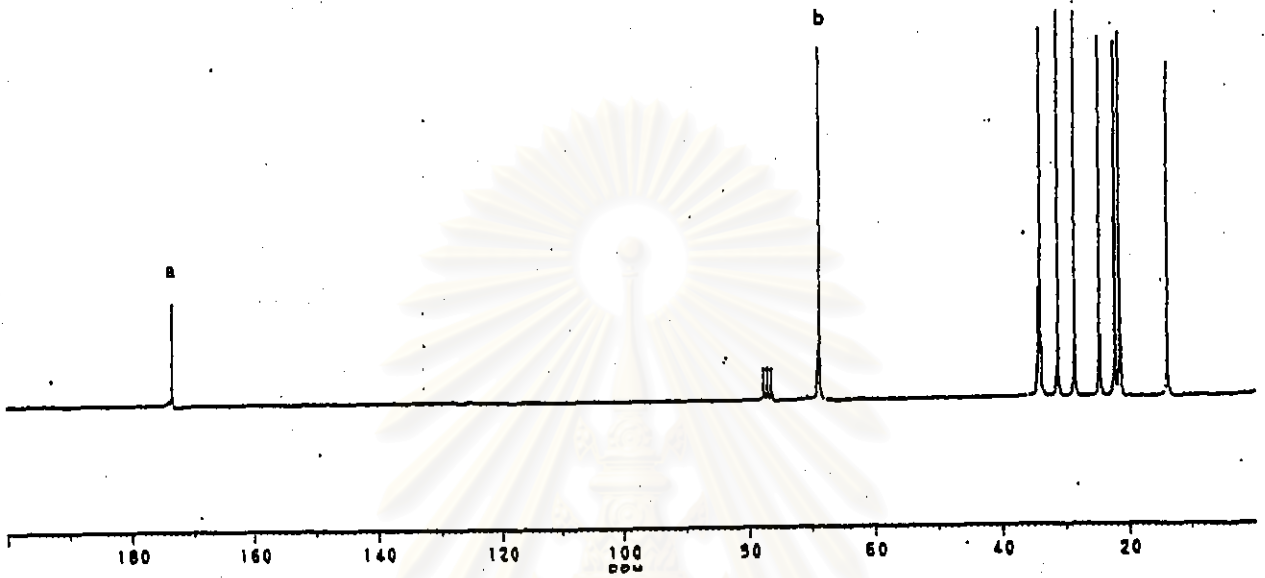
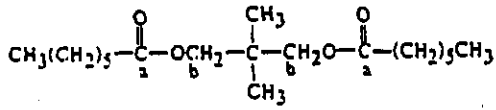


Figure A8: ^{13}C NMR (CDCl_3) spectrum of neopentyl glycol bis(heptanoate)

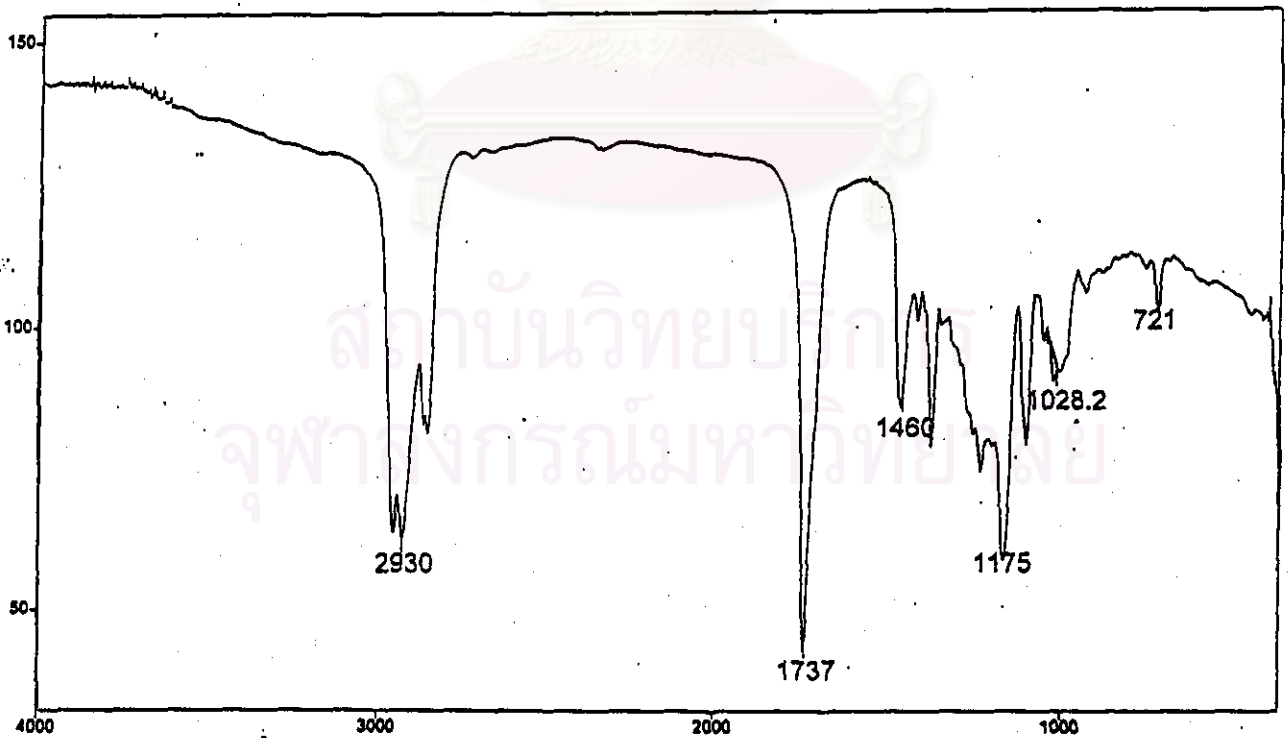


Figure B8: IR spectrum of neopentyl glycol bis(heptanoate)

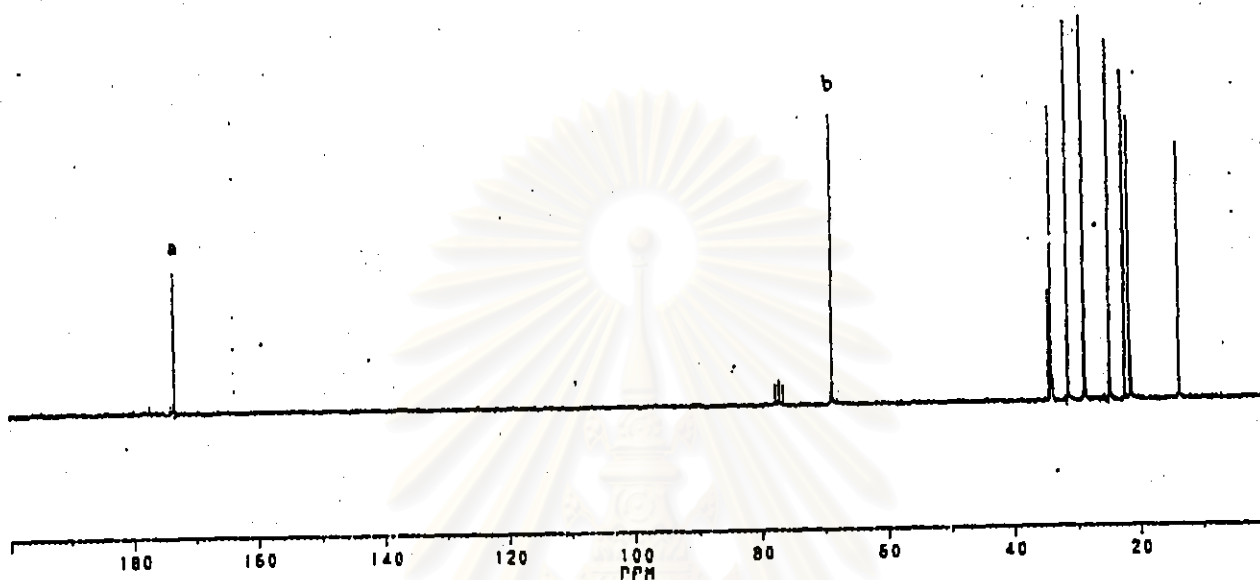
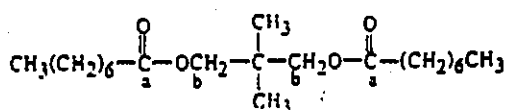


Figure A9: ^{13}C NMR (CDCl_3) spectrum of neopentyl glycol bis(octanoate)

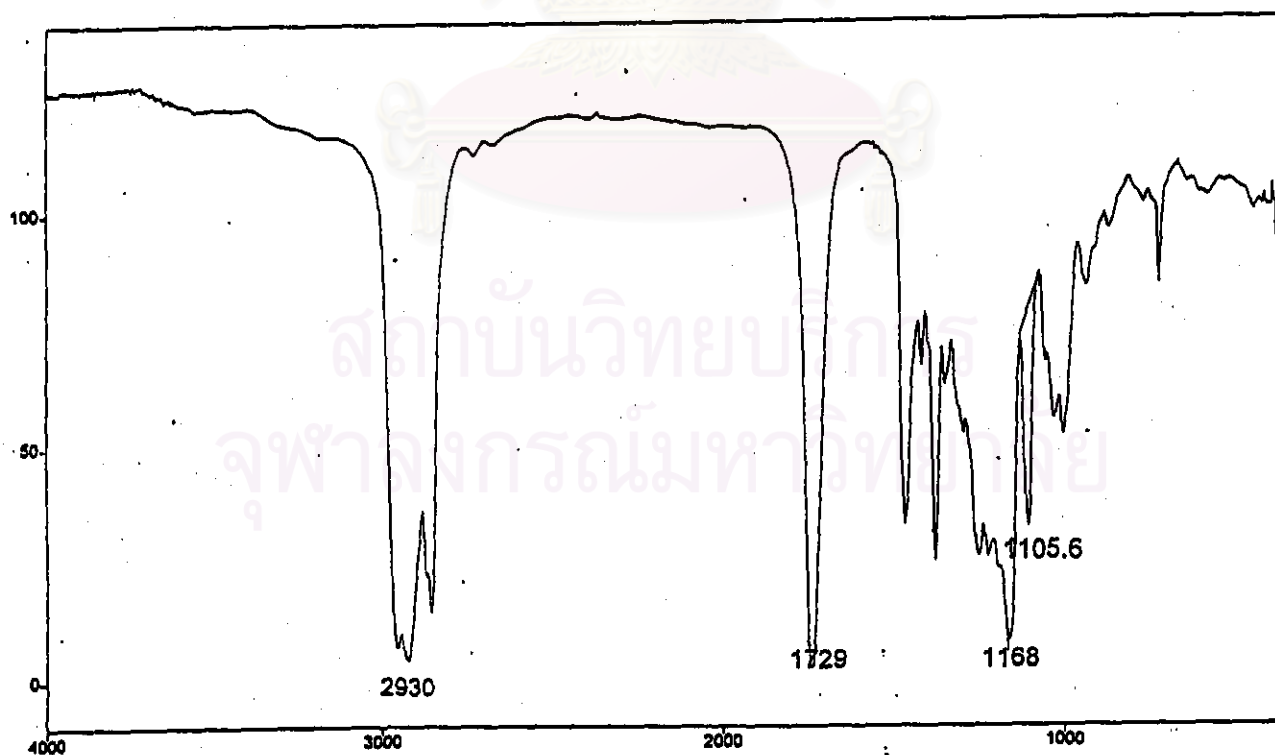


Figure B9: IR spectrum of neopentyl glycol bis(octanoate)

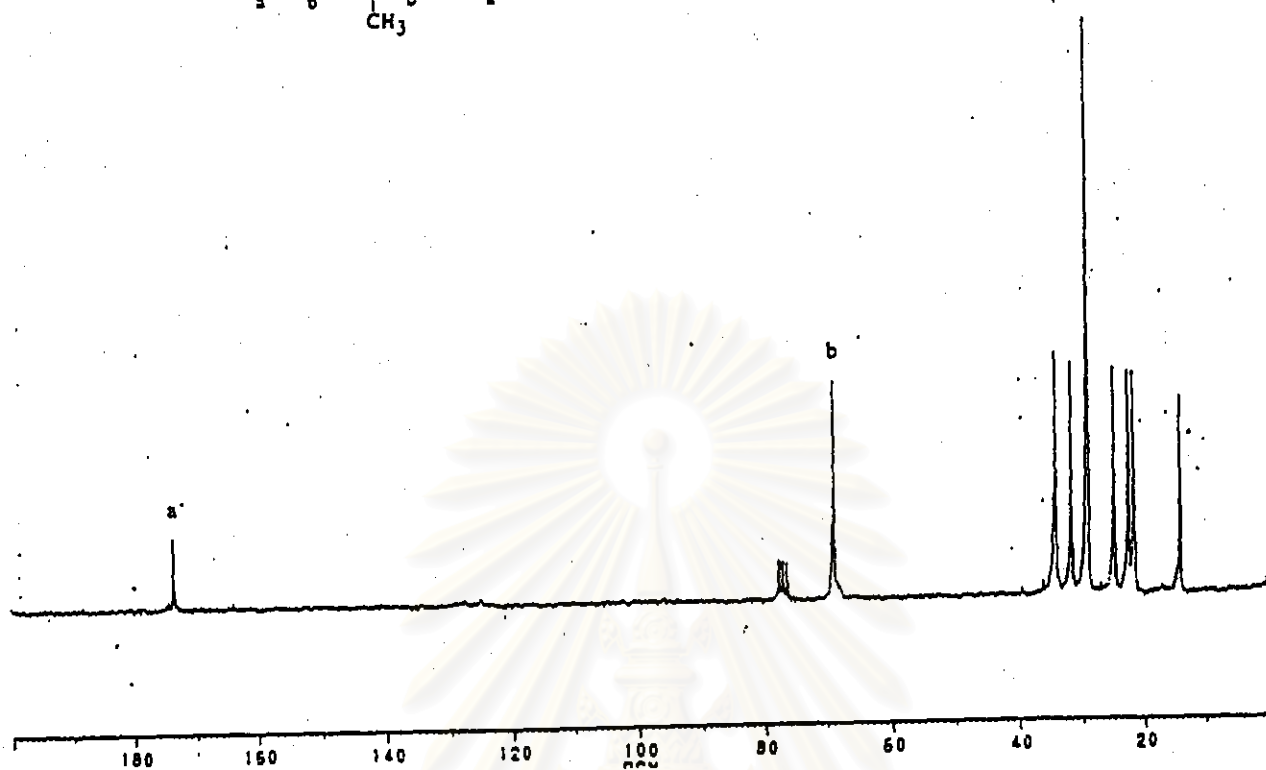
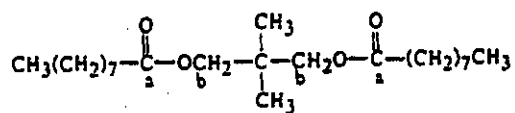


Figure A10: ^{13}C NMR (CDCl_3) spectrum of neopentyl glycol bis(nonanoate)

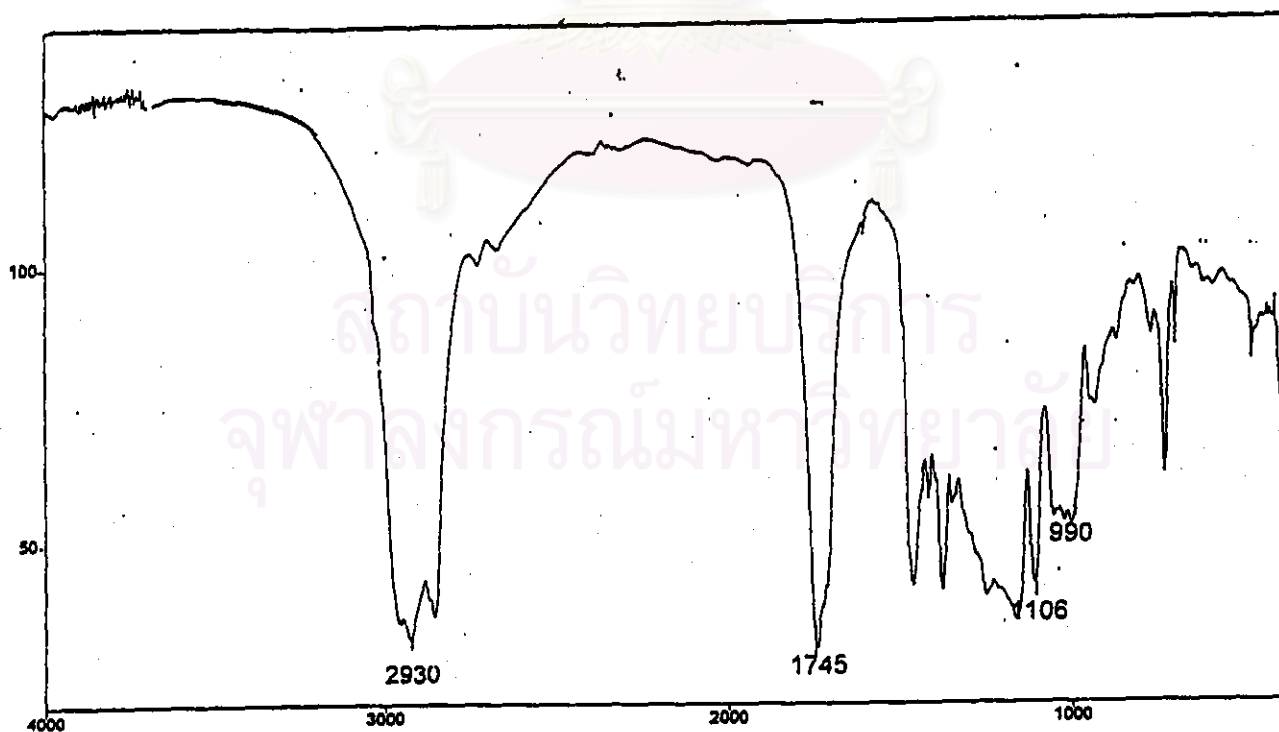


Figure B10: IR spectrum of neopentyl glycol bis(nonanoate)

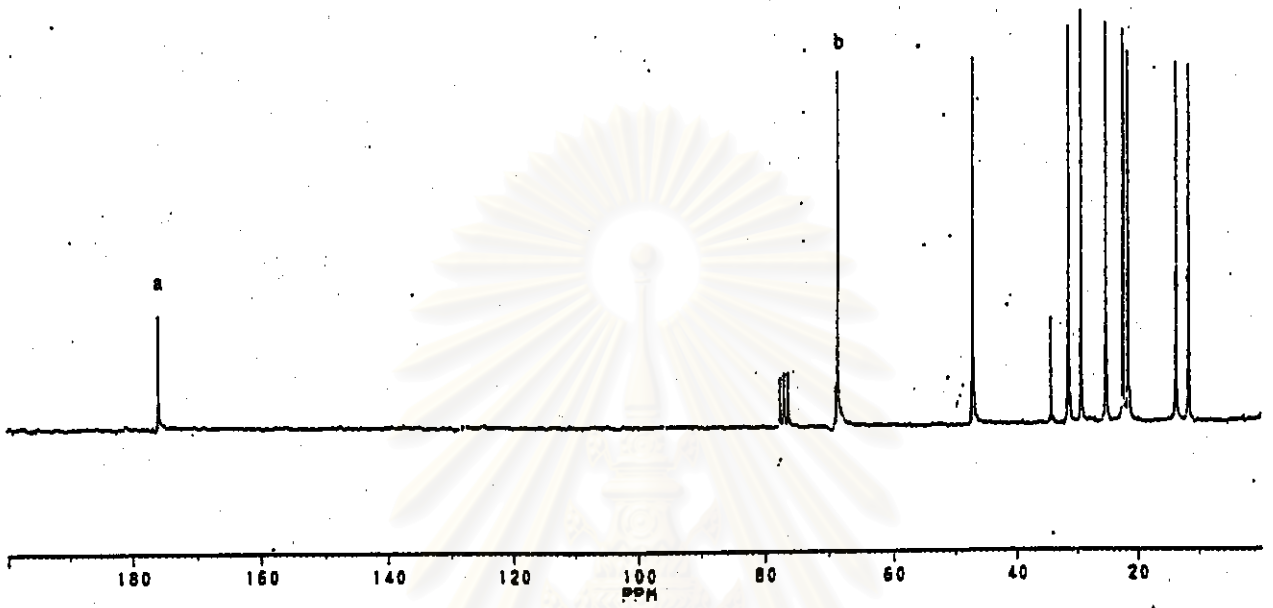
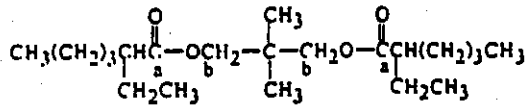


Figure A11: ¹³C NMR (CDCl₃) spectrum of neopentyl glycol
bis(2-ethyl-hexanoate)

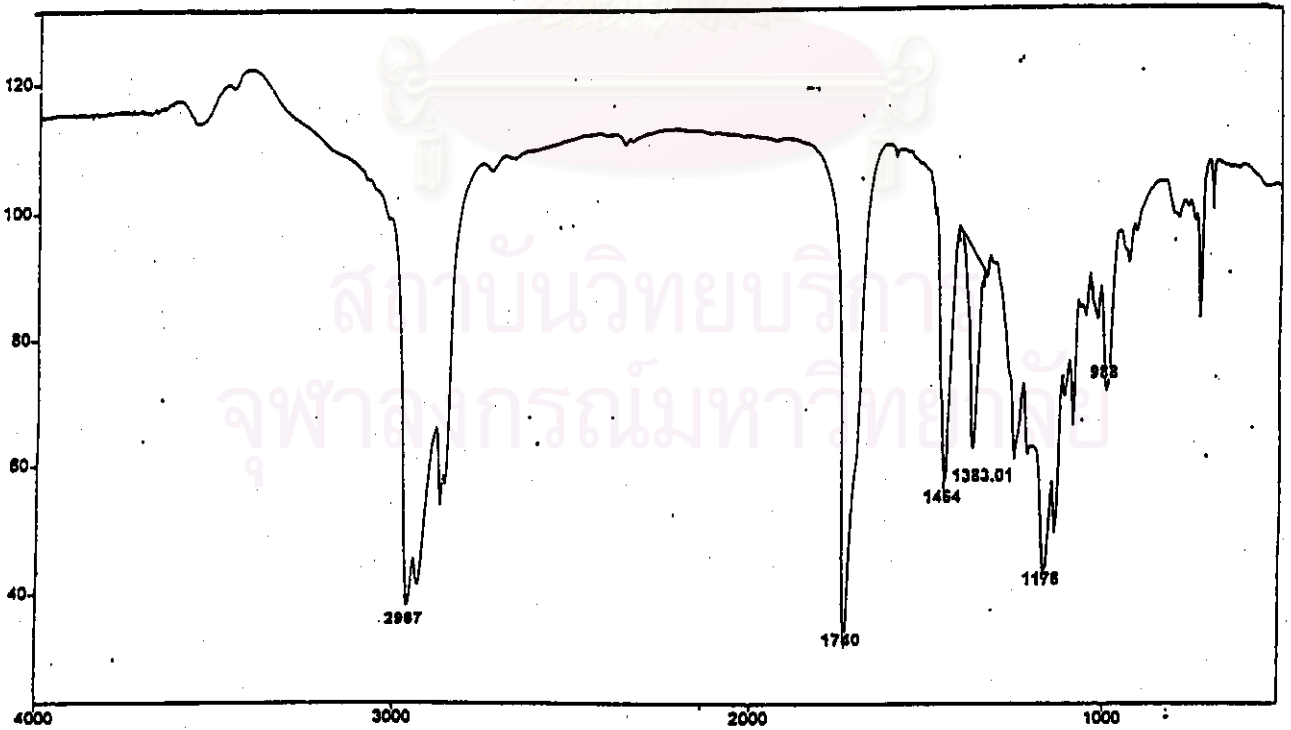


Figure B11: IR spectrum of neopentyl glycol bis(2-ethyl-hexanoate)

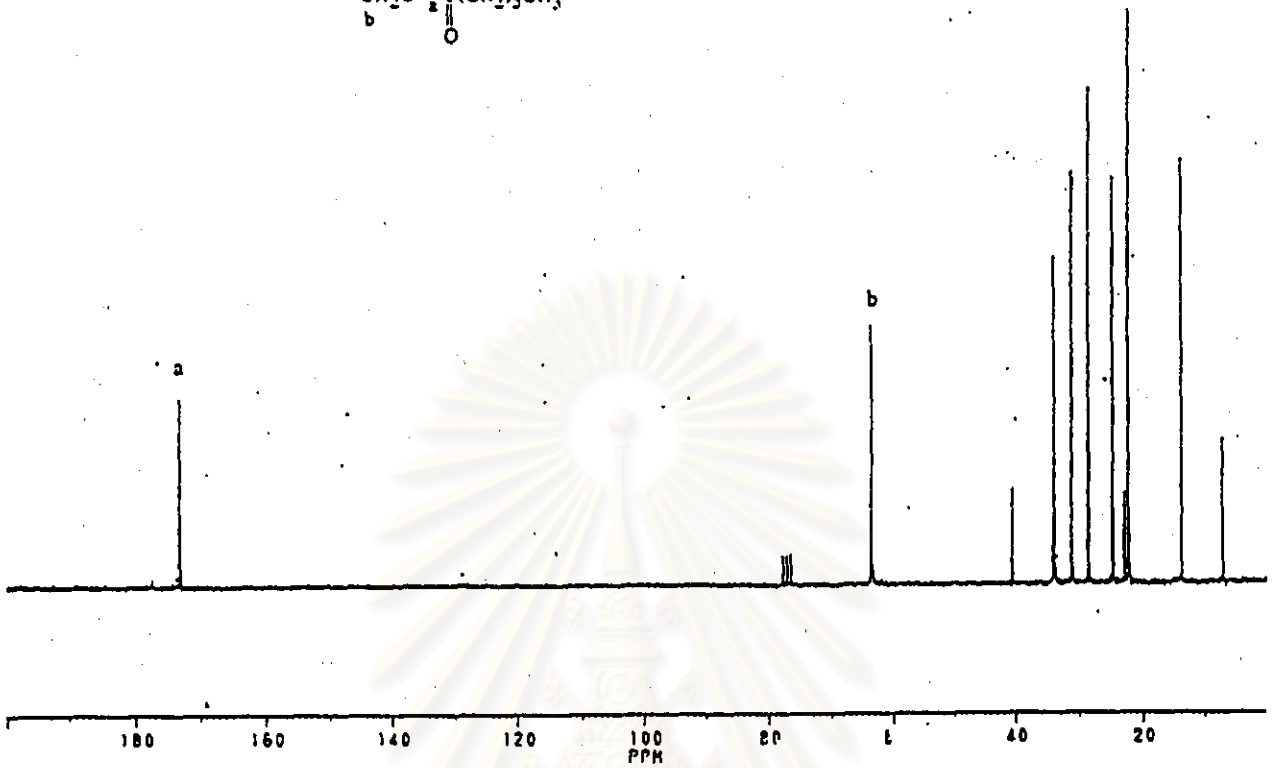
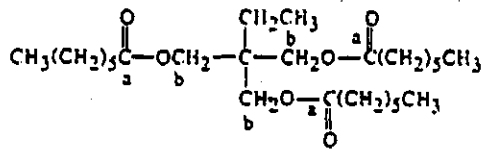


Figure A12: ^{13}C NMR (CDCl_3) spectrum of trimethylolpropane tris(heptanoate)

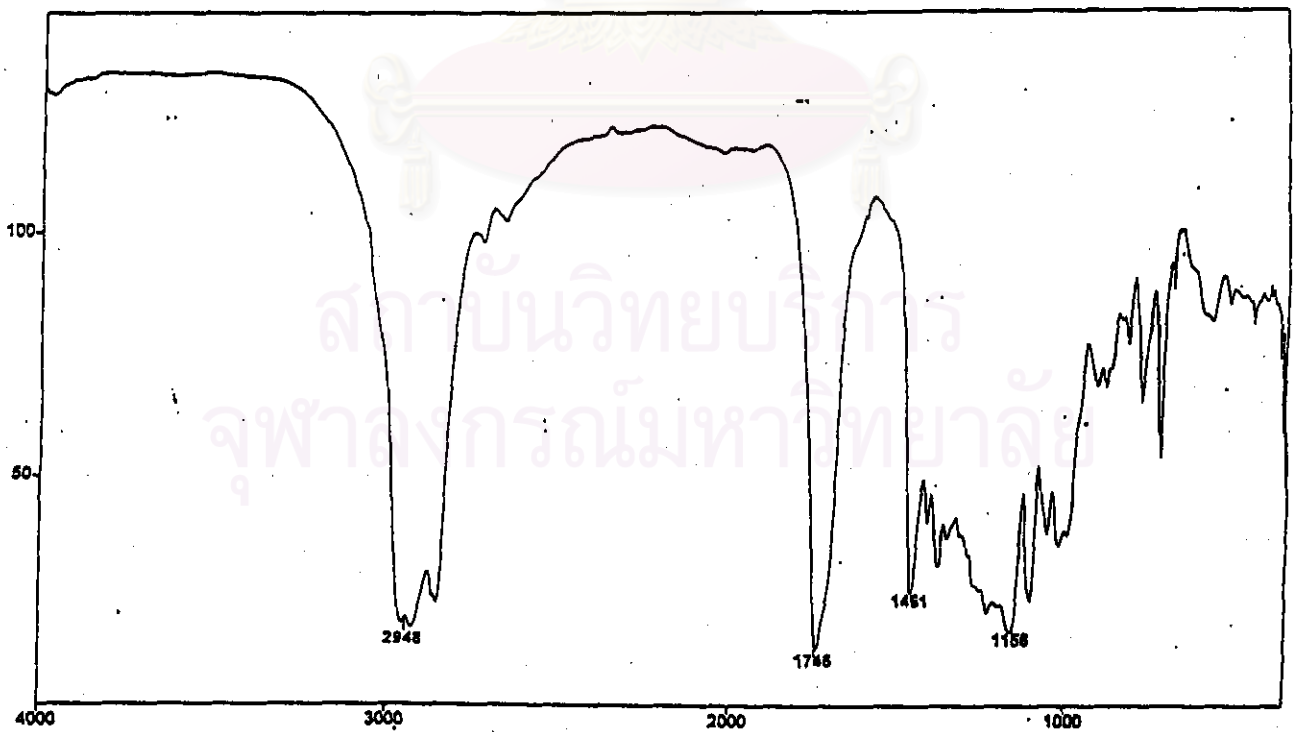


Figure B12: IR spectrum of trimethylolpropane tris(heptanoate)

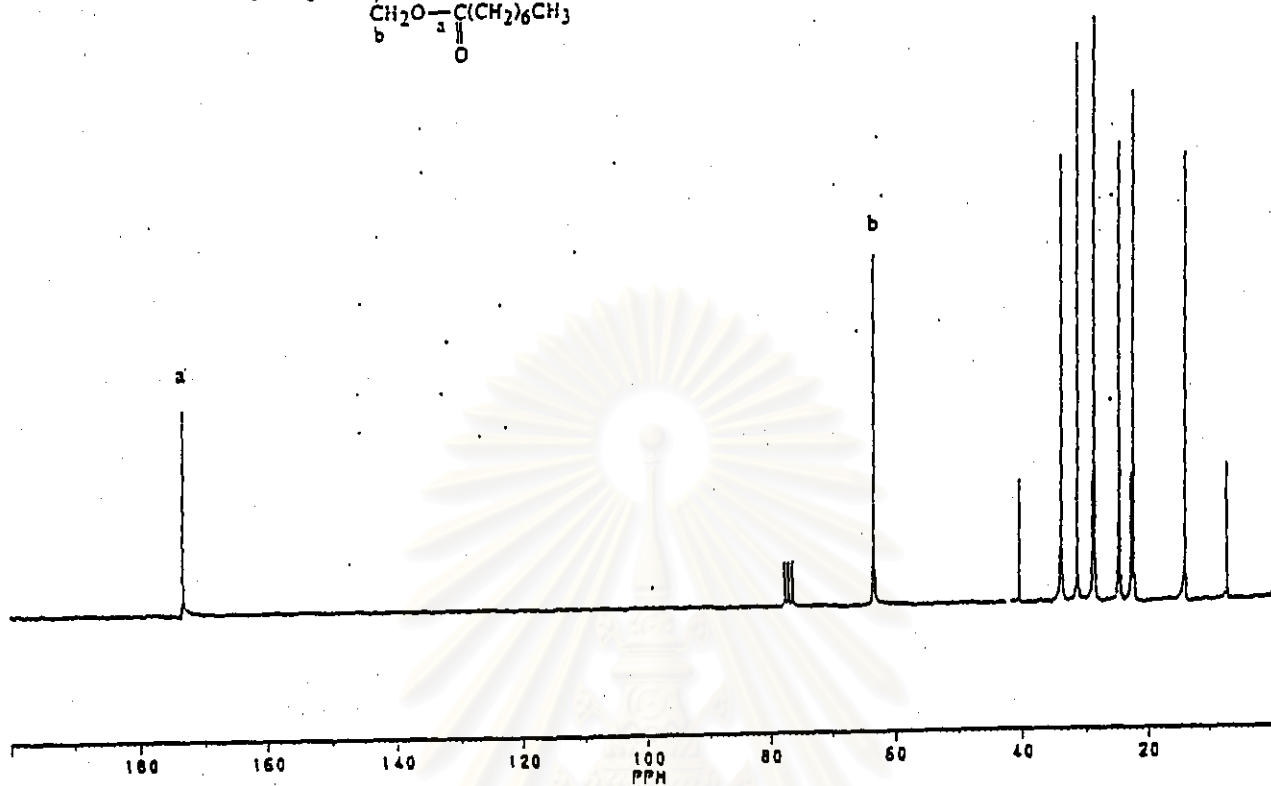
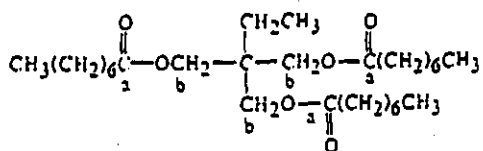


Figure A13: ^{13}C NMR (CDCl_3) spectrum of trimethylolpropane tris(octanoate)

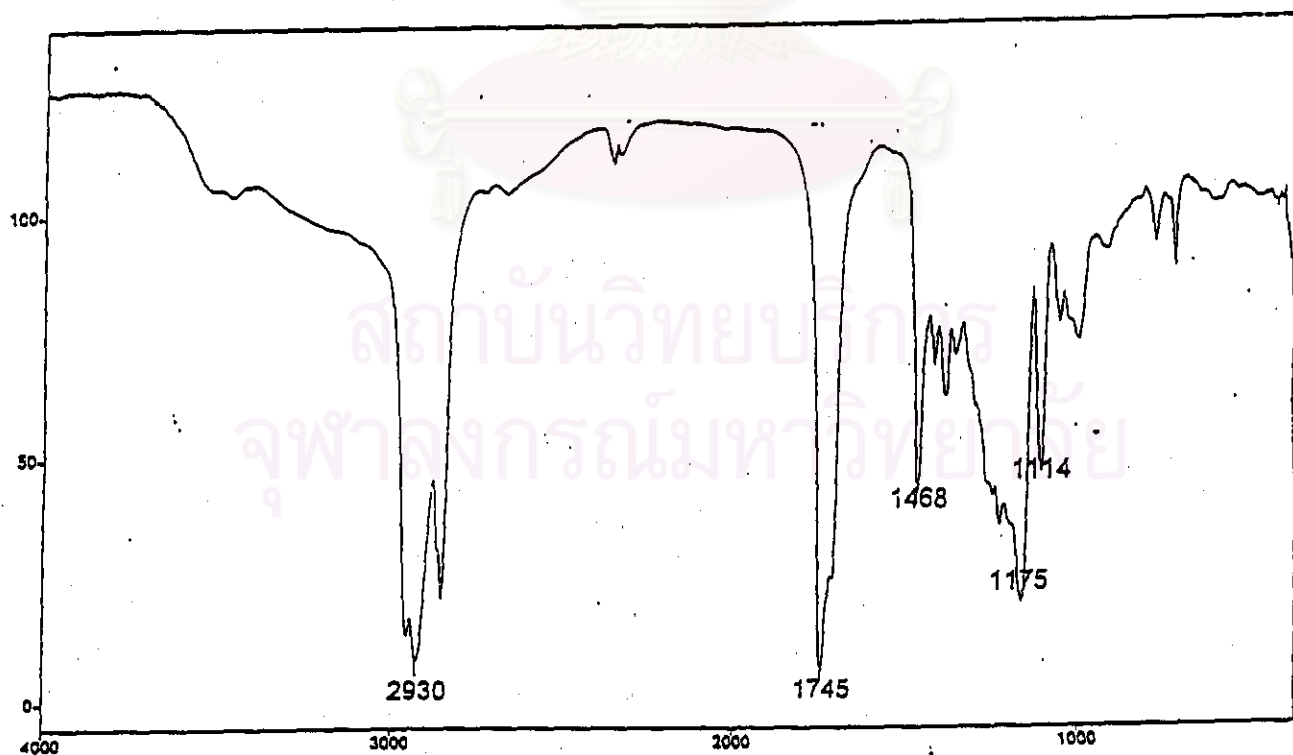


Figure B13: IR spectrum of trimethylolpropane tris(octanoate)

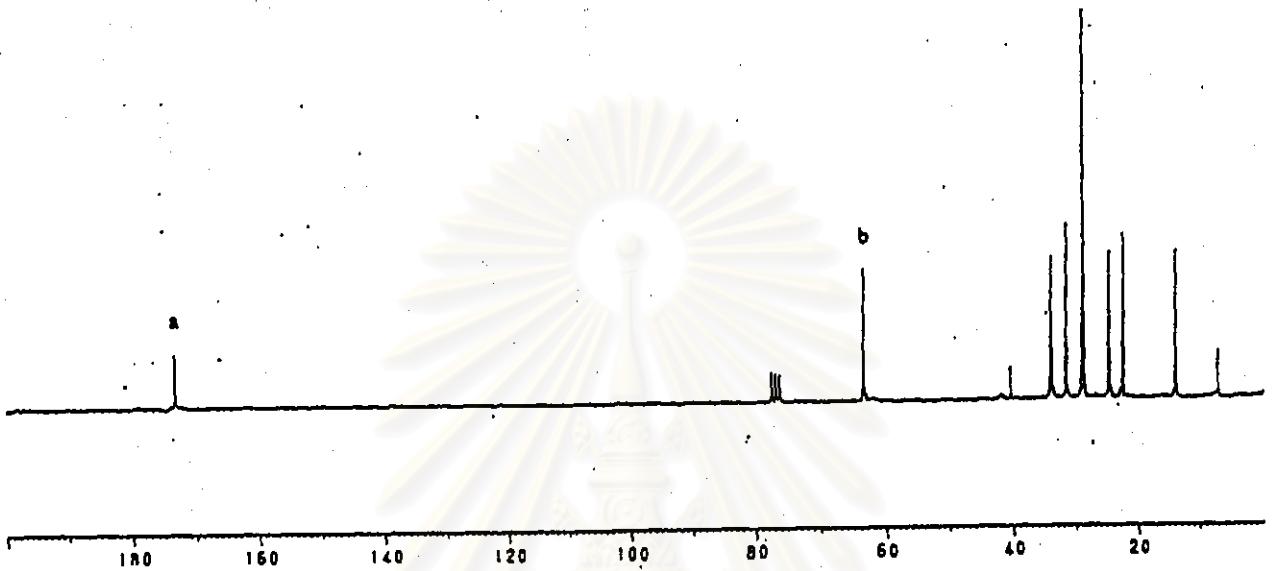
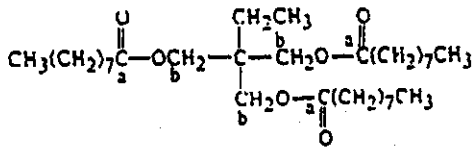


Figure A14: ^{13}C NMR (CDCl_3) spectrum of trimethylolpropane tris(nonanoate)

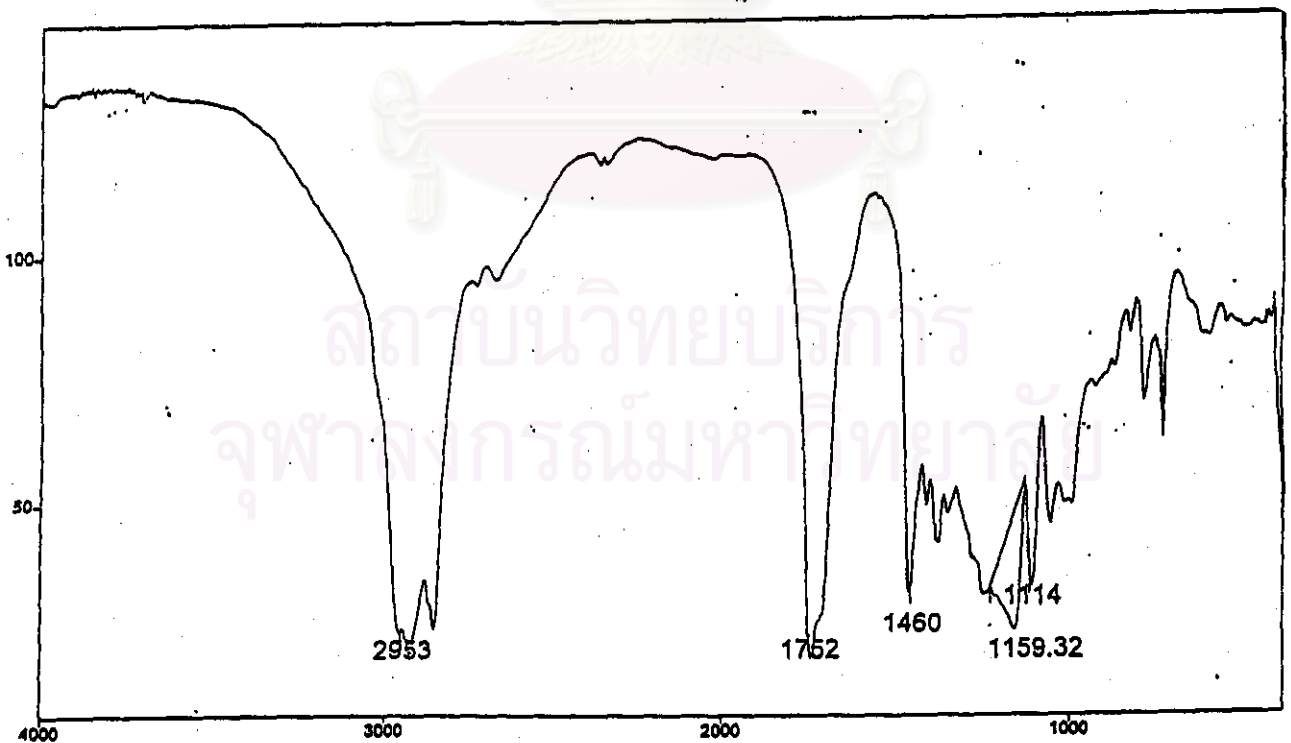


Figure B14: IR spectrum of trimethylolpropane tris(nonanoate)

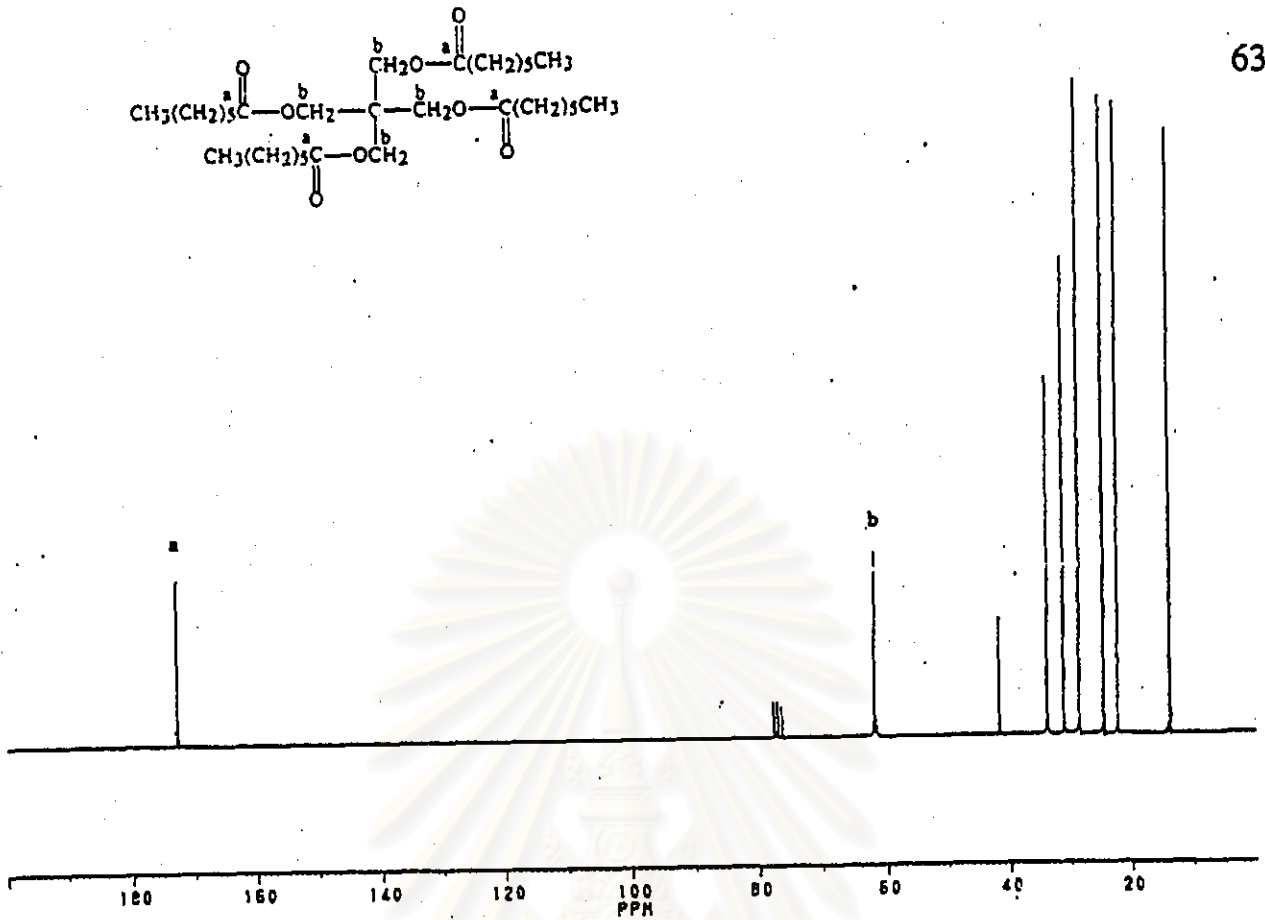


Figure A16: ^{13}C NMR (CDCl_3) spectrum of pentaerythritol tetrakis(heptanoate)

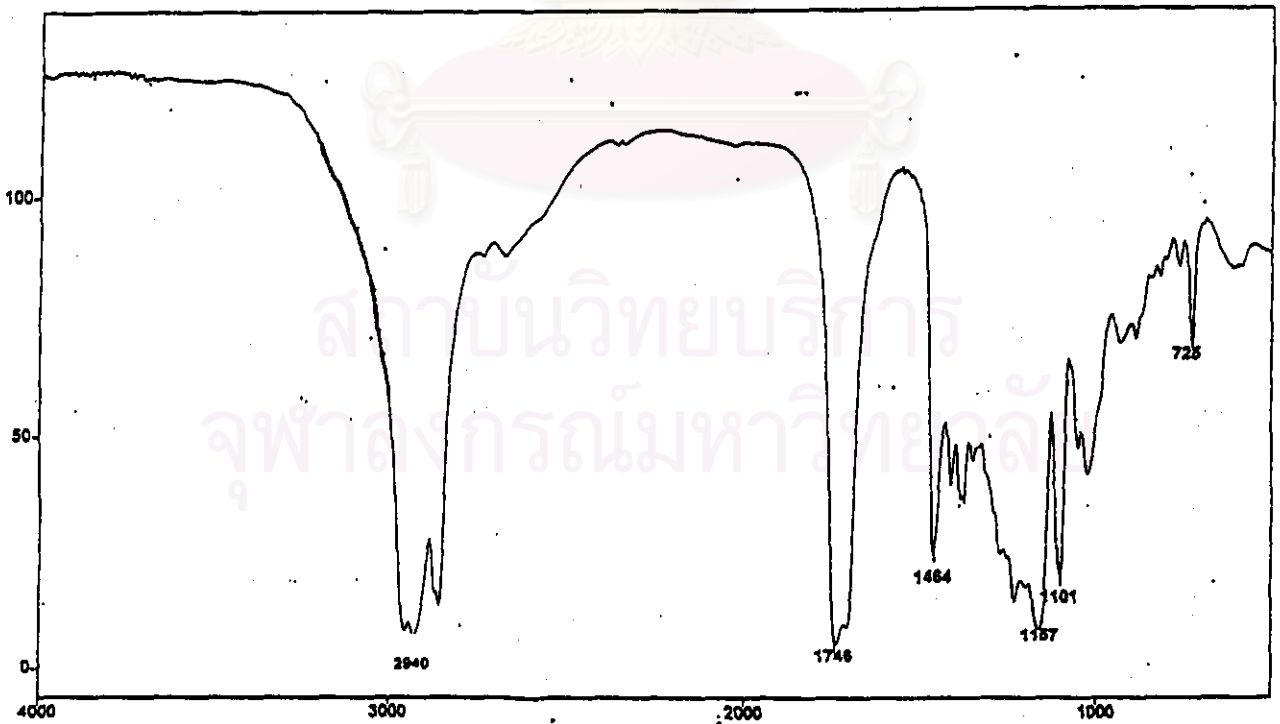


Figure B16: IR spectrum of pentaerythritol tetrakis(heptanoate)

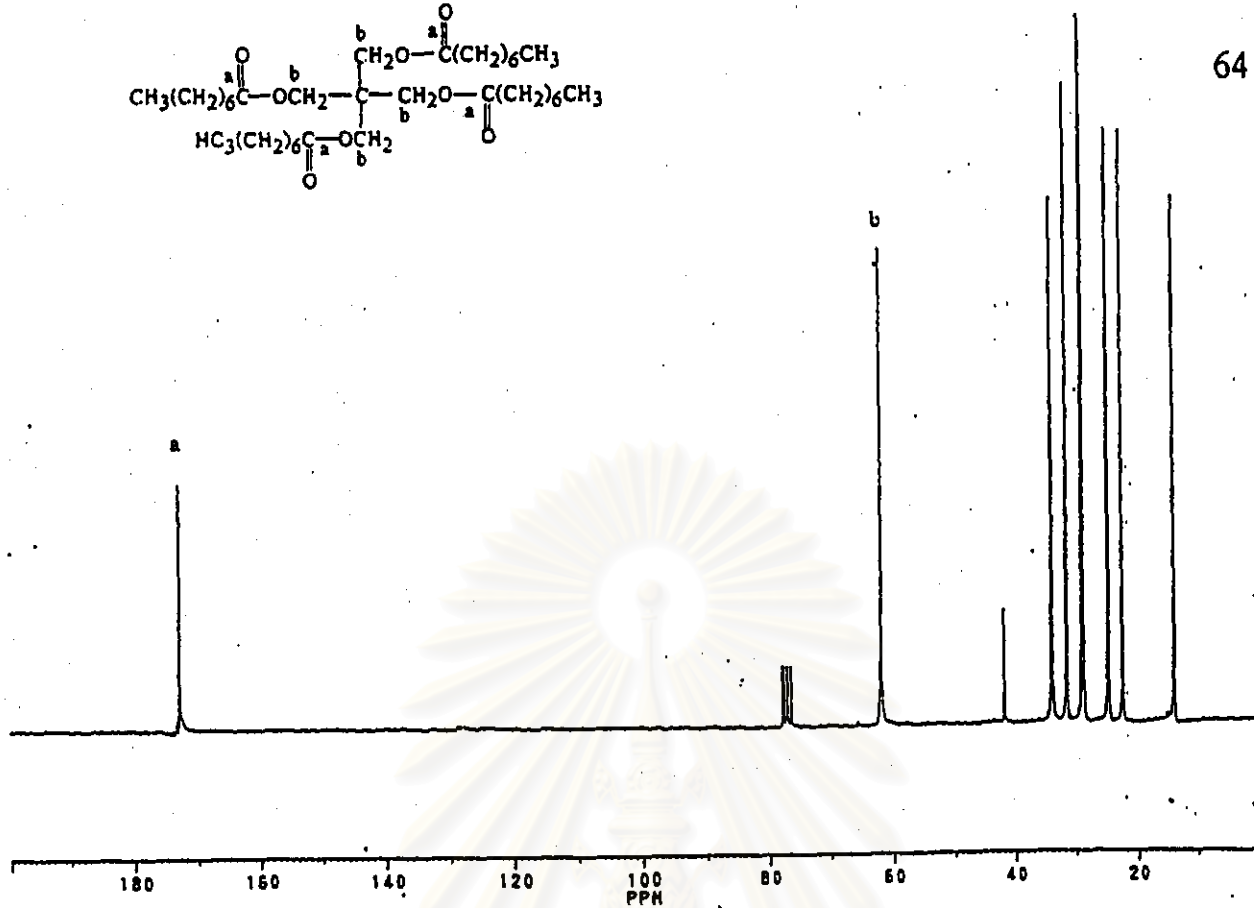
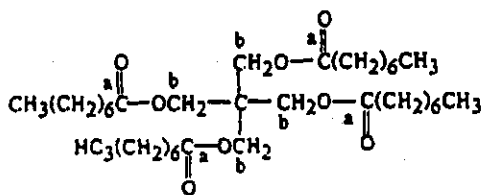


Figure A17: ^{13}C NMR (CDCl_3) spectrum of pentaerythritol tetrakis(octanoate)

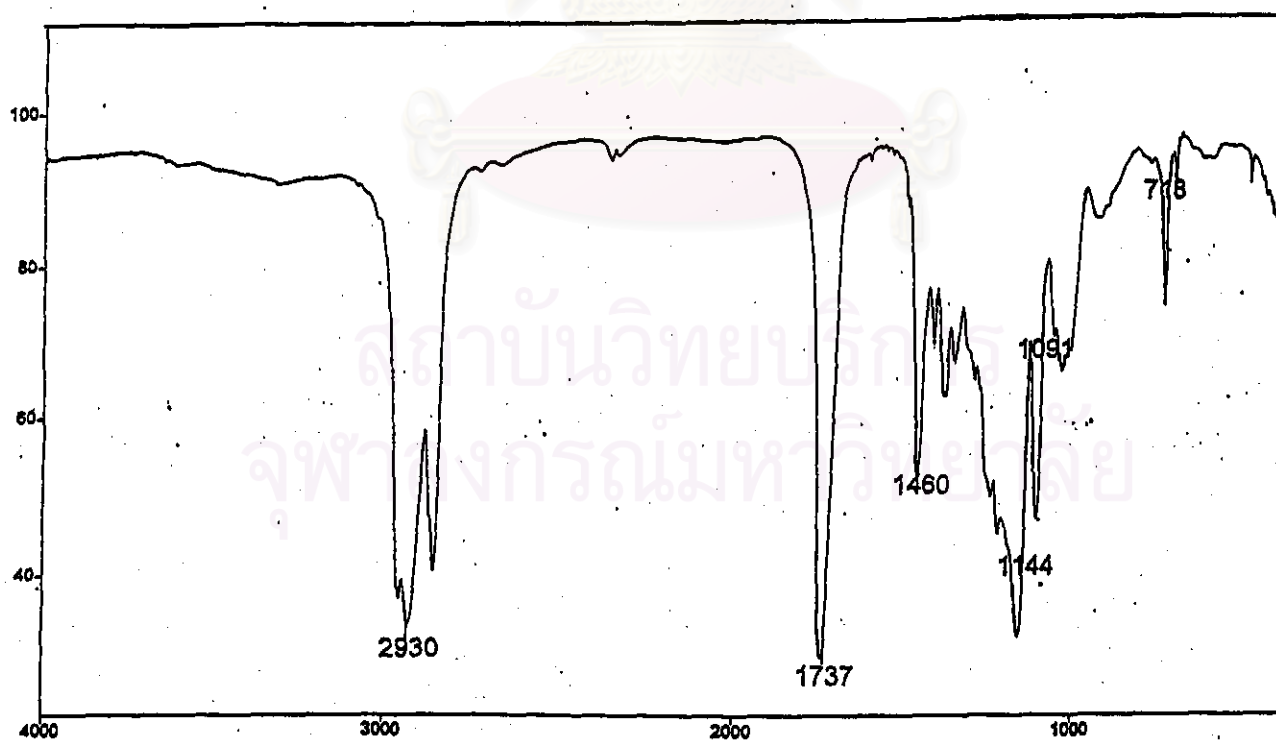


Figure B17: IR spectrum of pentaerythritol tetrakis(octanoate)

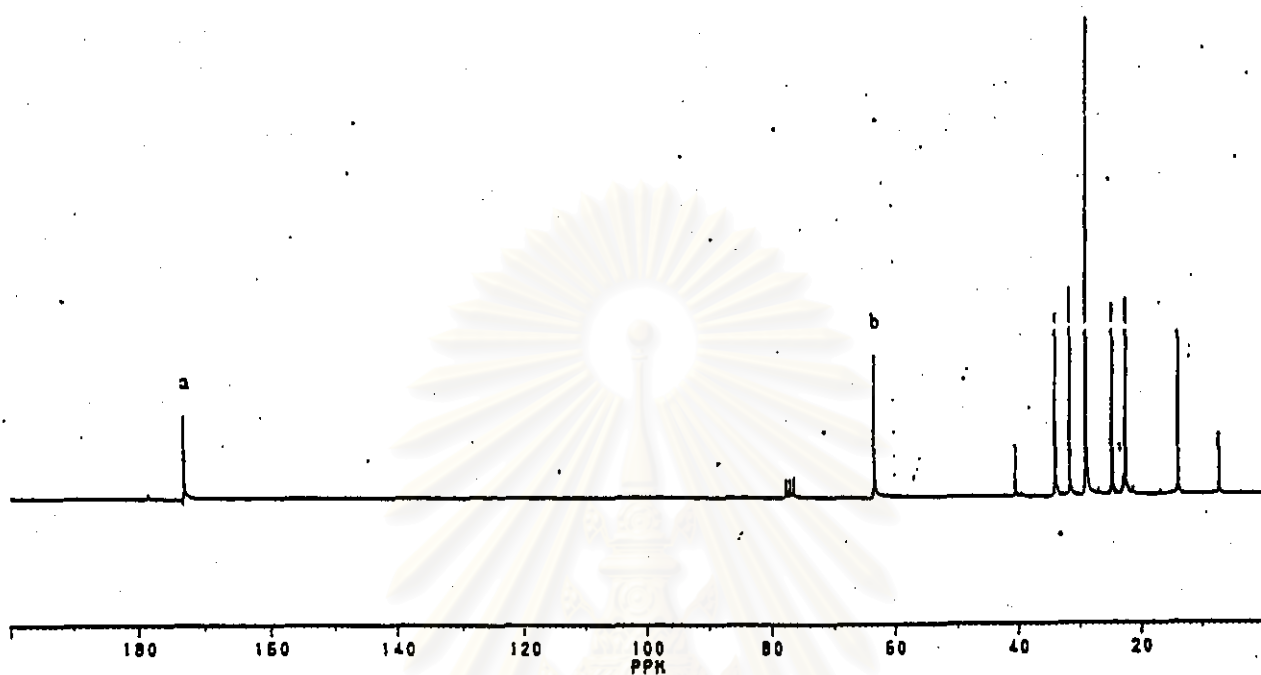
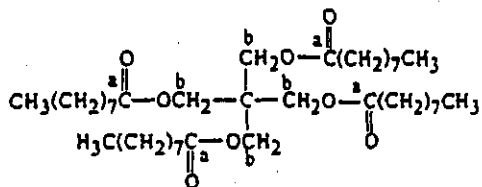


Figure A18: ^{13}C NMR (CDCl_3) spectrum of pentaerythritol tetrakis(nonanoate)

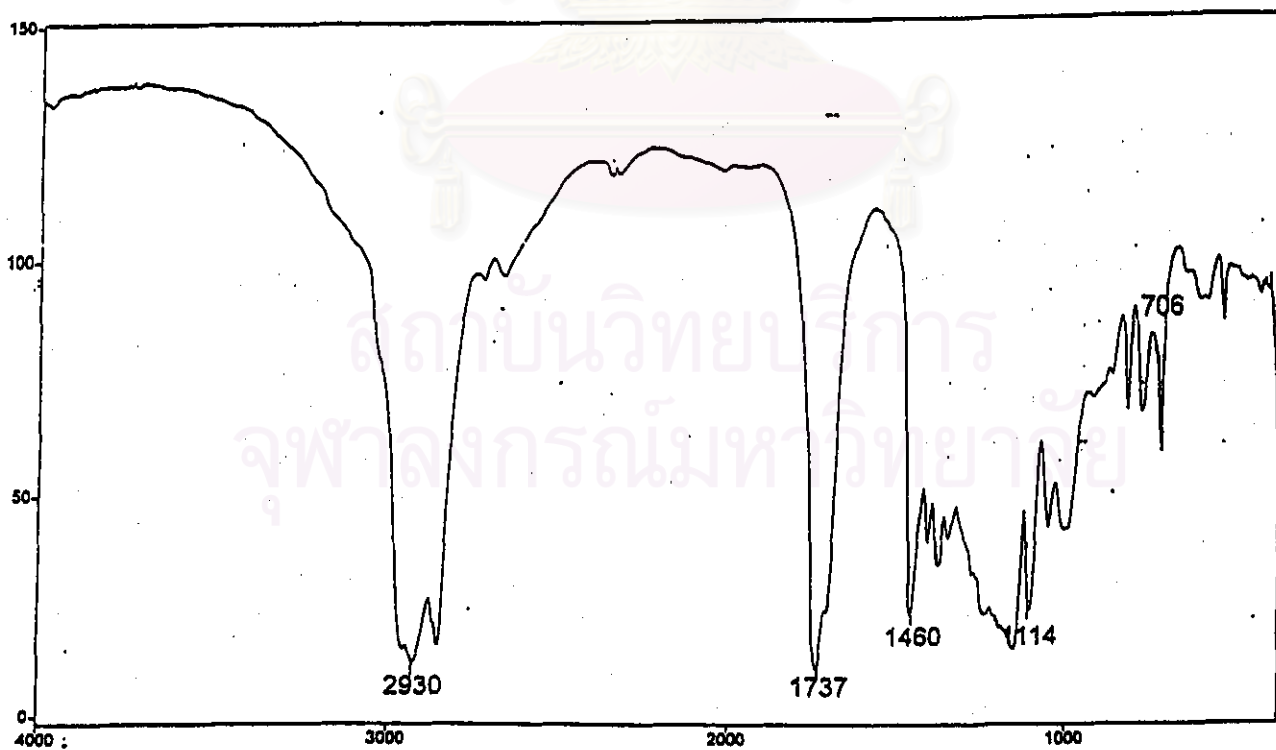


Figure B18: IR spectrum of pentaerythritol tetrakis(nonanoate)

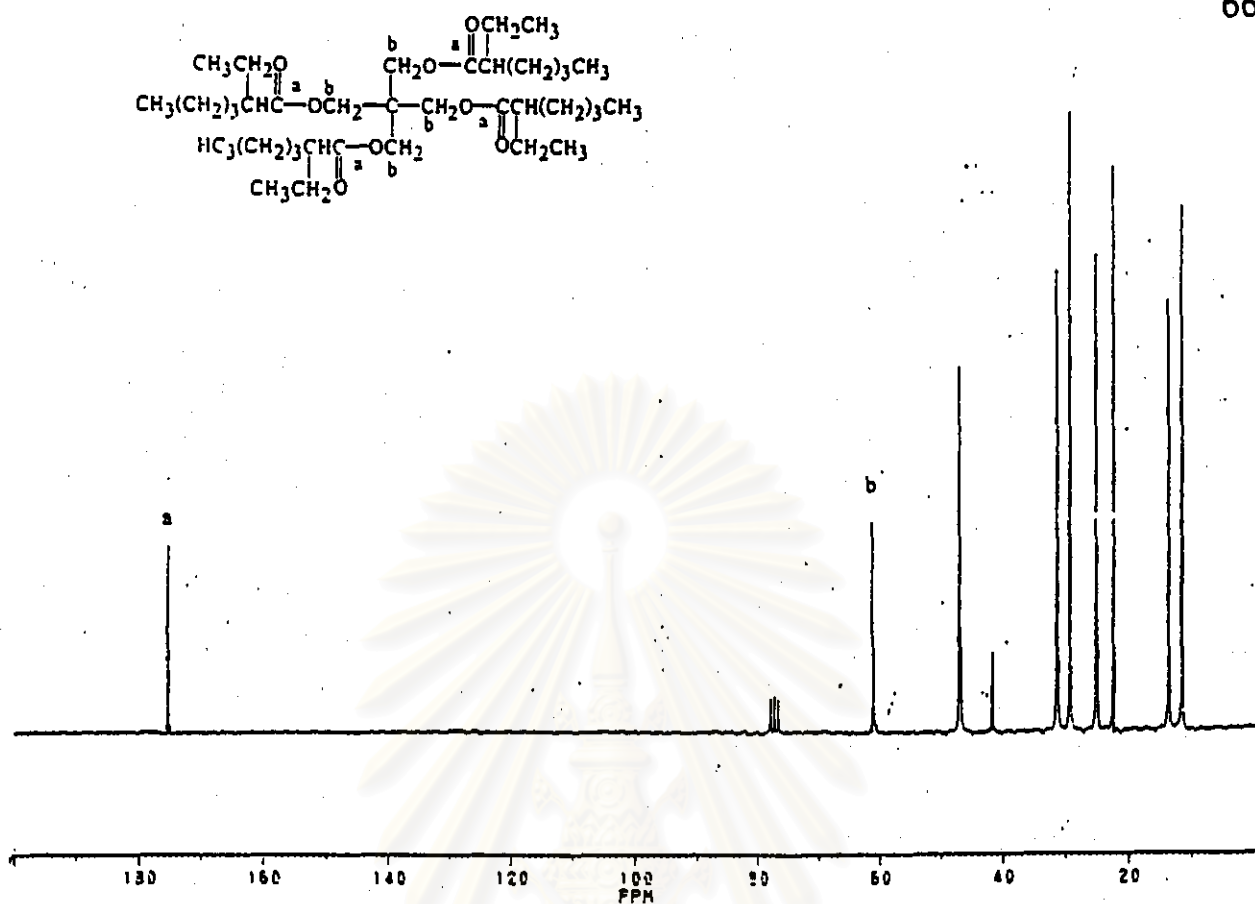


Figure A19: ¹³C NMR (CDCl₃) spectrum of pentaerythritol tetrakis(2-ethyl-hexanoate)

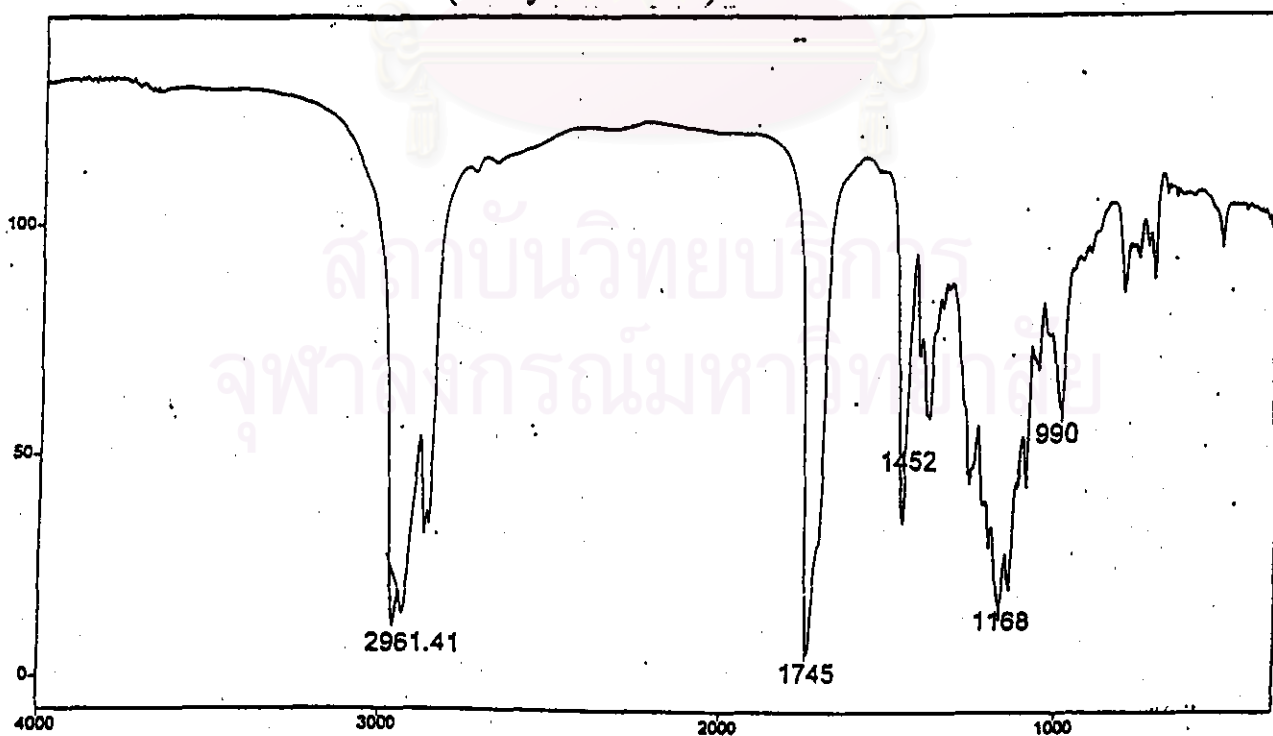


Figure B19: IR spectrum of pentaerythritol tetrakis(2-ethyl-hexanoate)

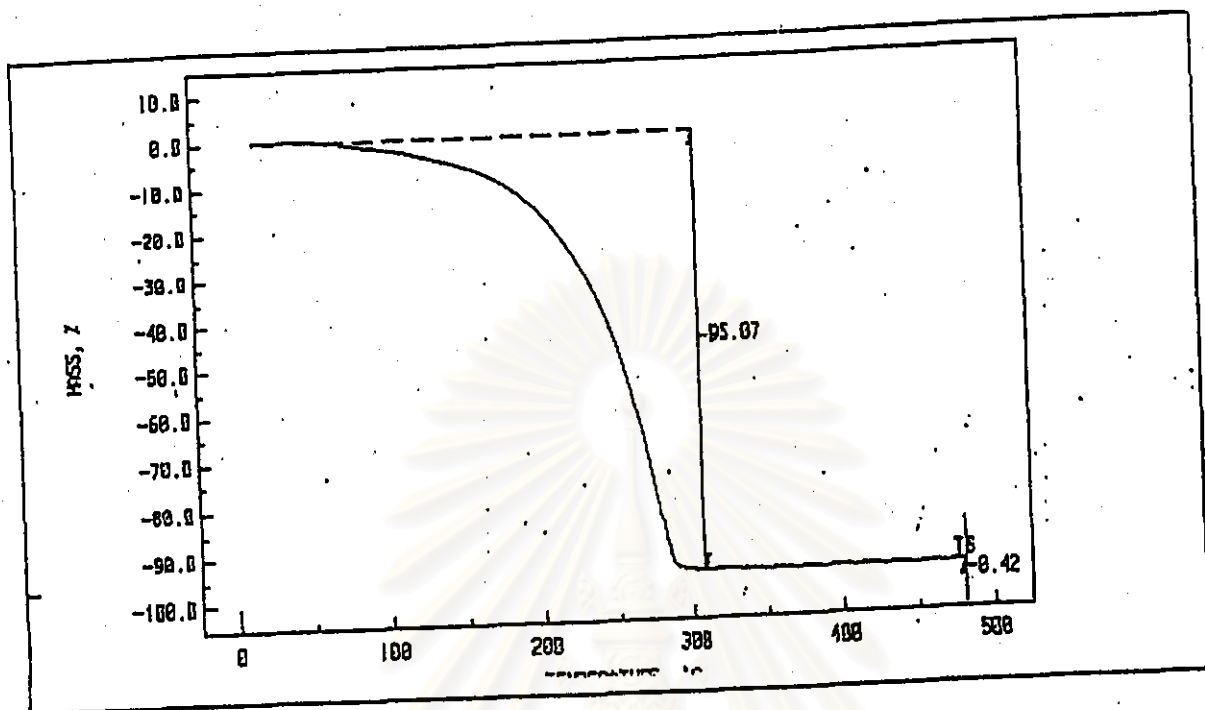


Figure C1: Thermogram of neopentyl glycol bis(heptanoate)

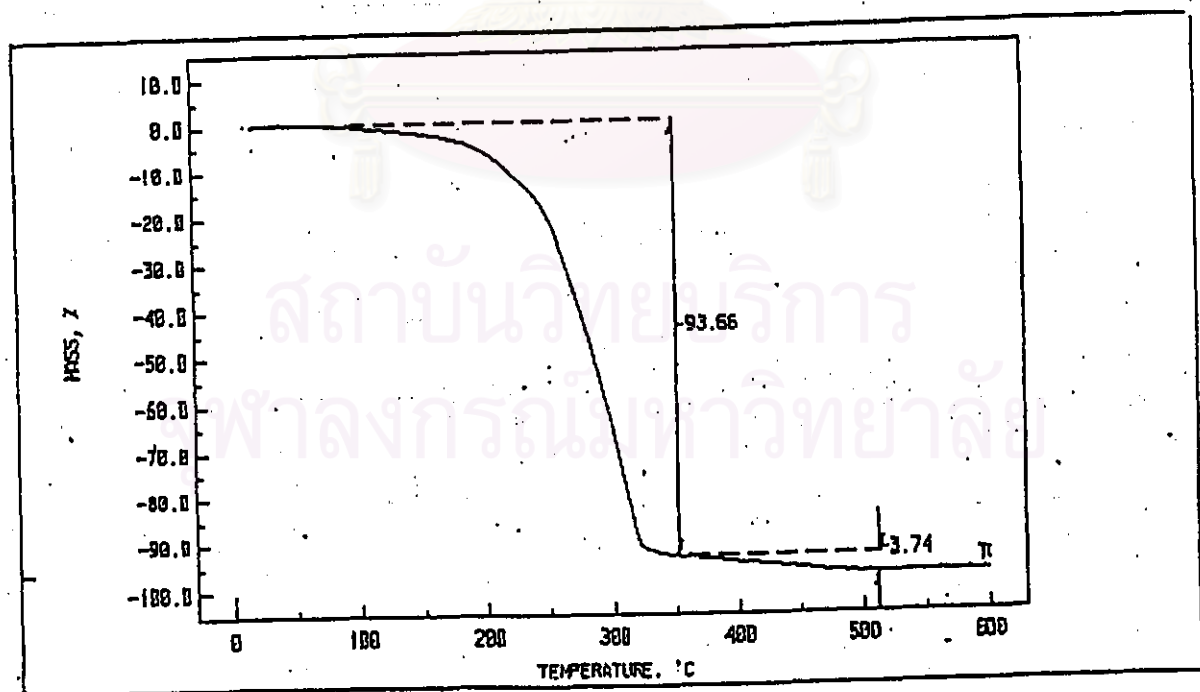


Figure C2 : Thermogram of neopentyl glycol bis(octanoate)

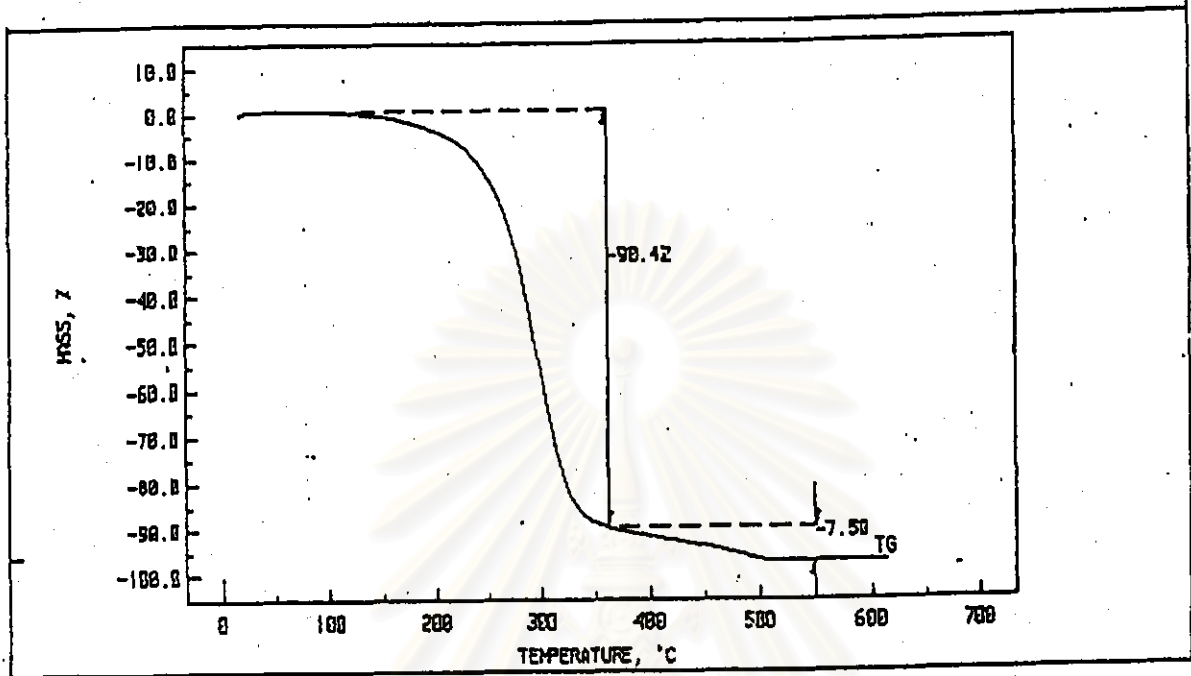


Figure C3: Thermogram of neopentyl glycol bis(nonanoate)

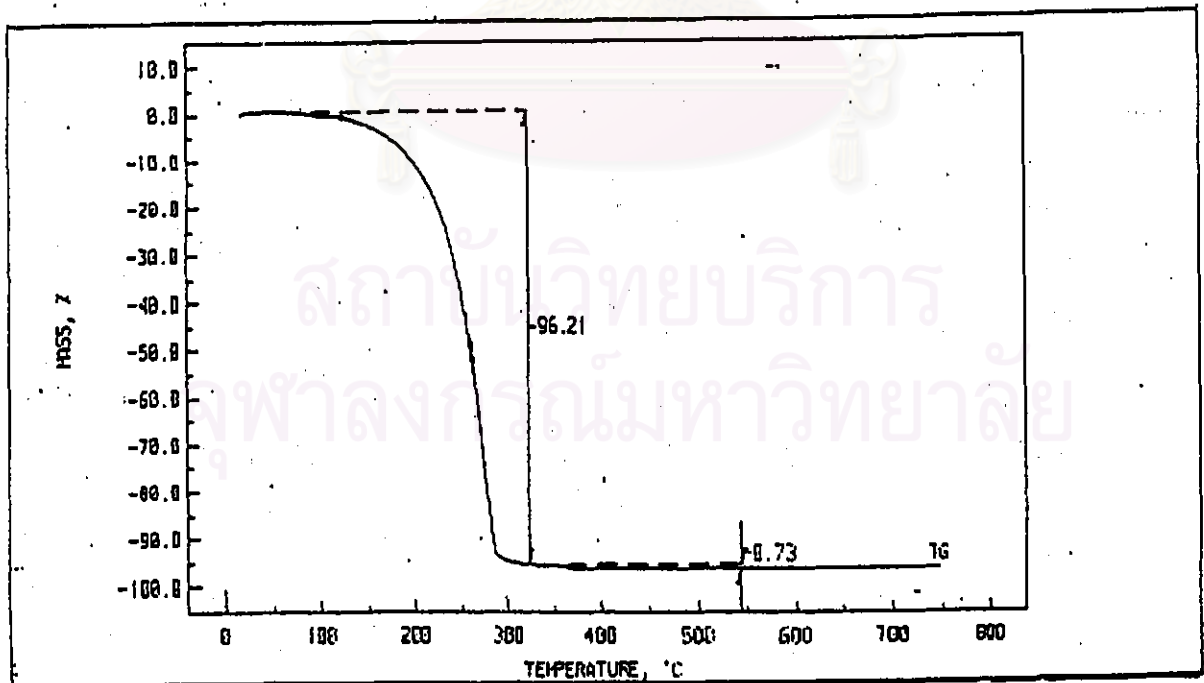


Figure C4 : Thermogram of neopentyl glycol bis(2-ethyl-hexanoate)

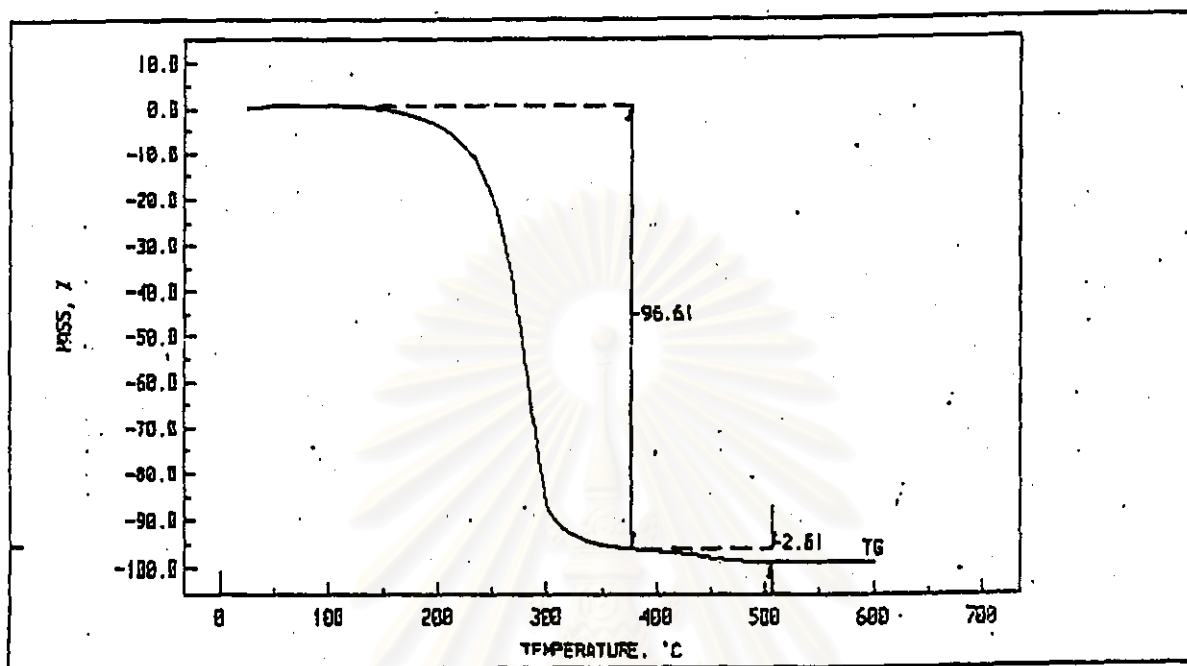


Figure C5: Thermogram of trimethylolpropane tris(heptanoate)

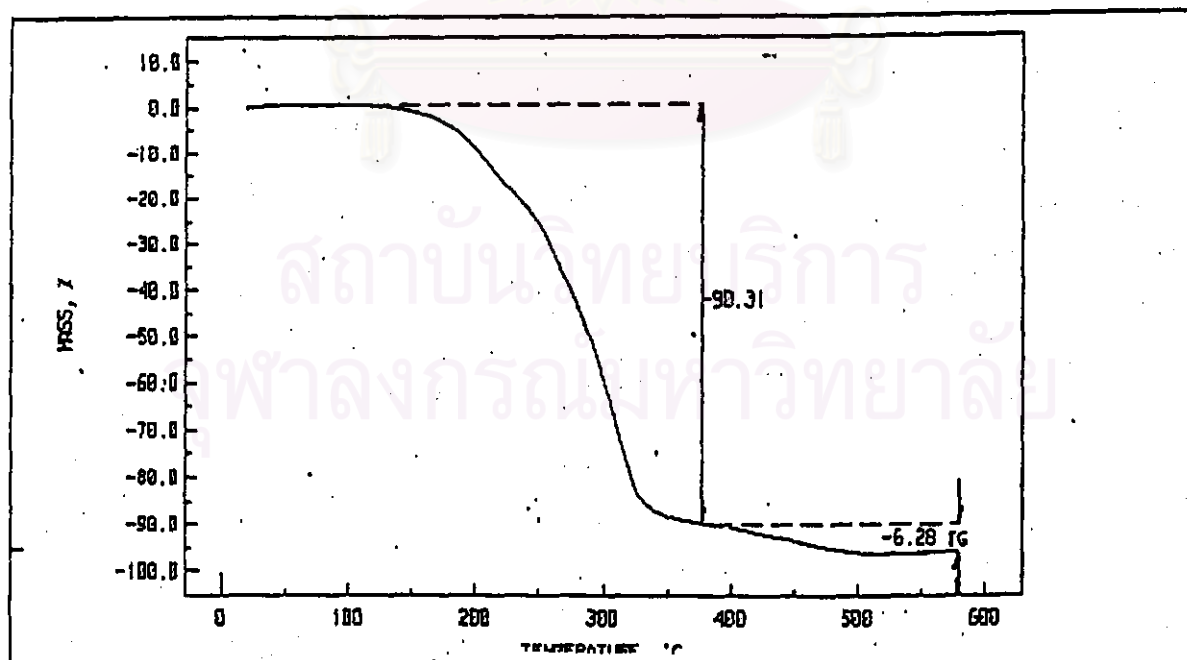


Figure C6 : Thermogram of trimethylolpropane tris(octanoate)

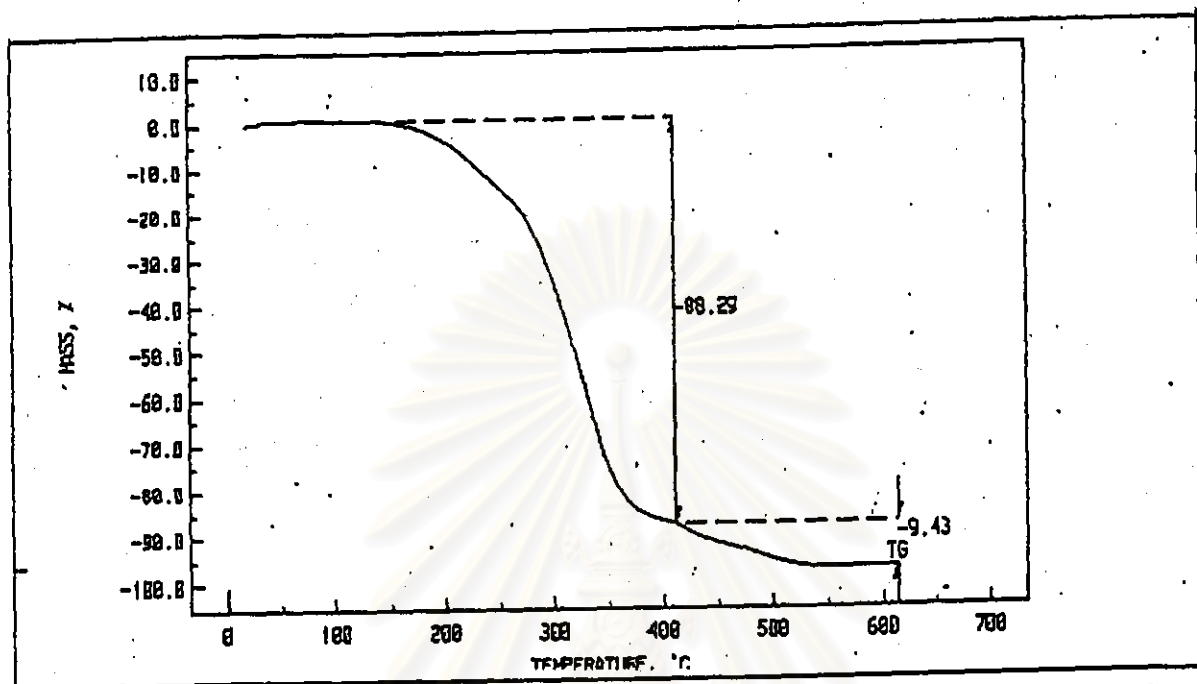


Figure C7: Thermogram of trimethylolpropane tris(nonanoate)

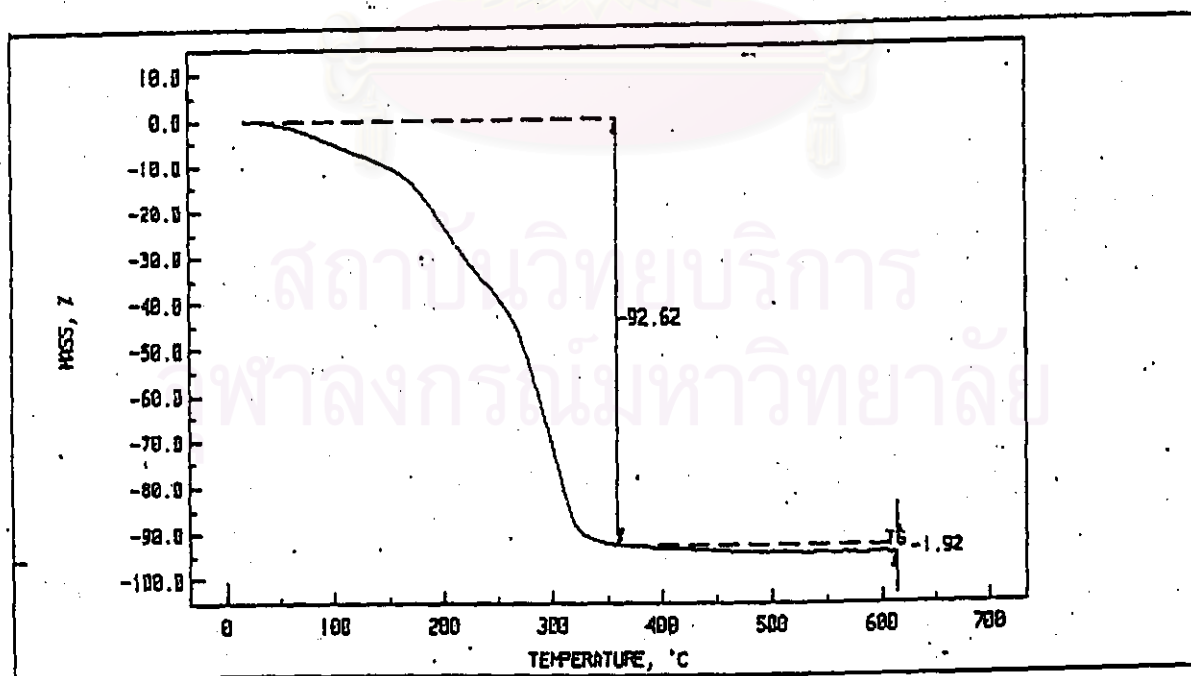


Figure C8 : Thermogram of trimethylolpropane tris(2-ethyl-hexanoate)

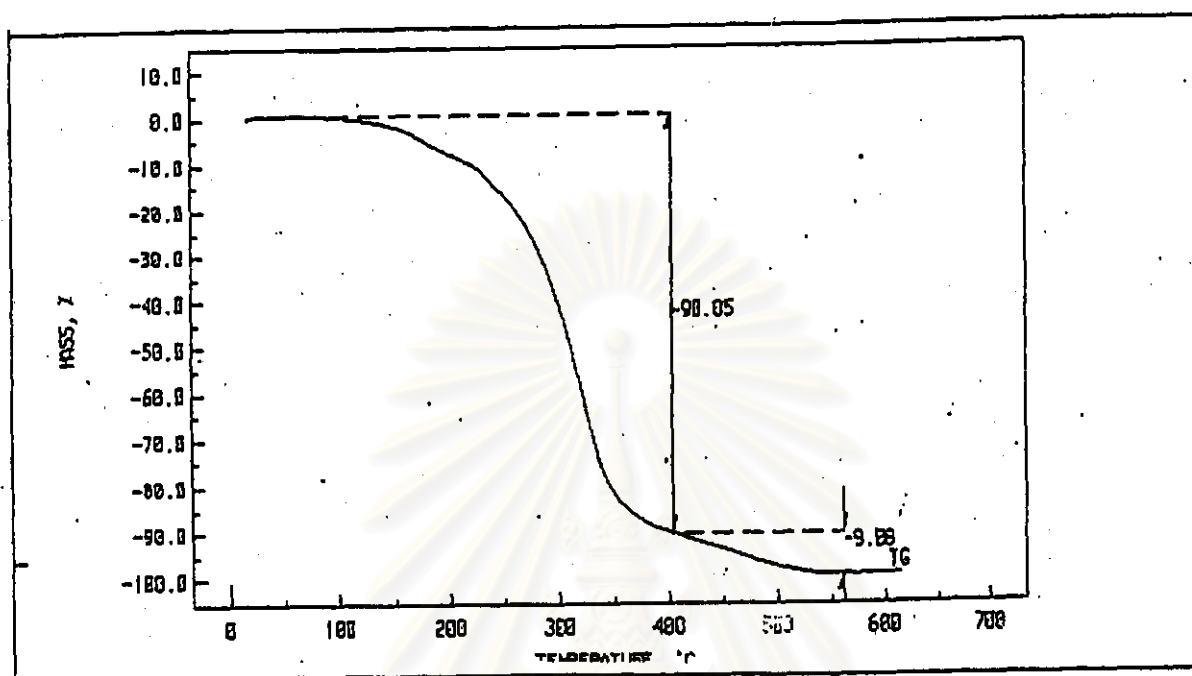


Figure C9: Thermogram of pentaerythritol tetrakis(heptanoate)

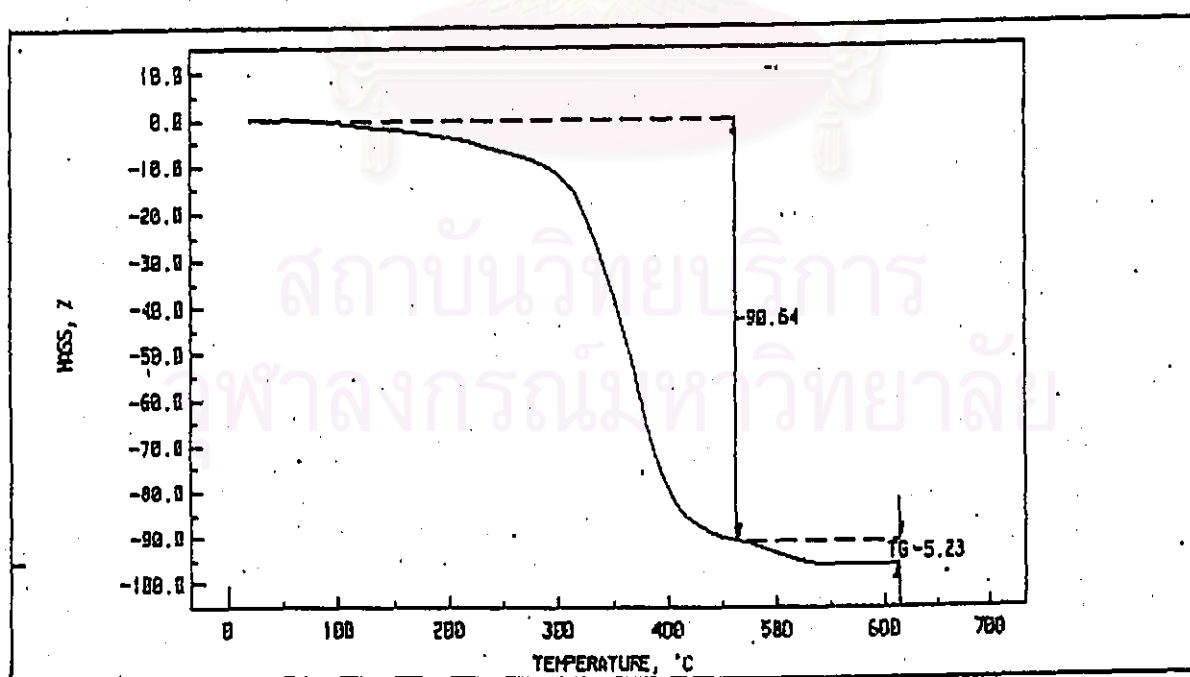


Figure C10: Thermogram of pentaerythritol tetrakis(octanoate)

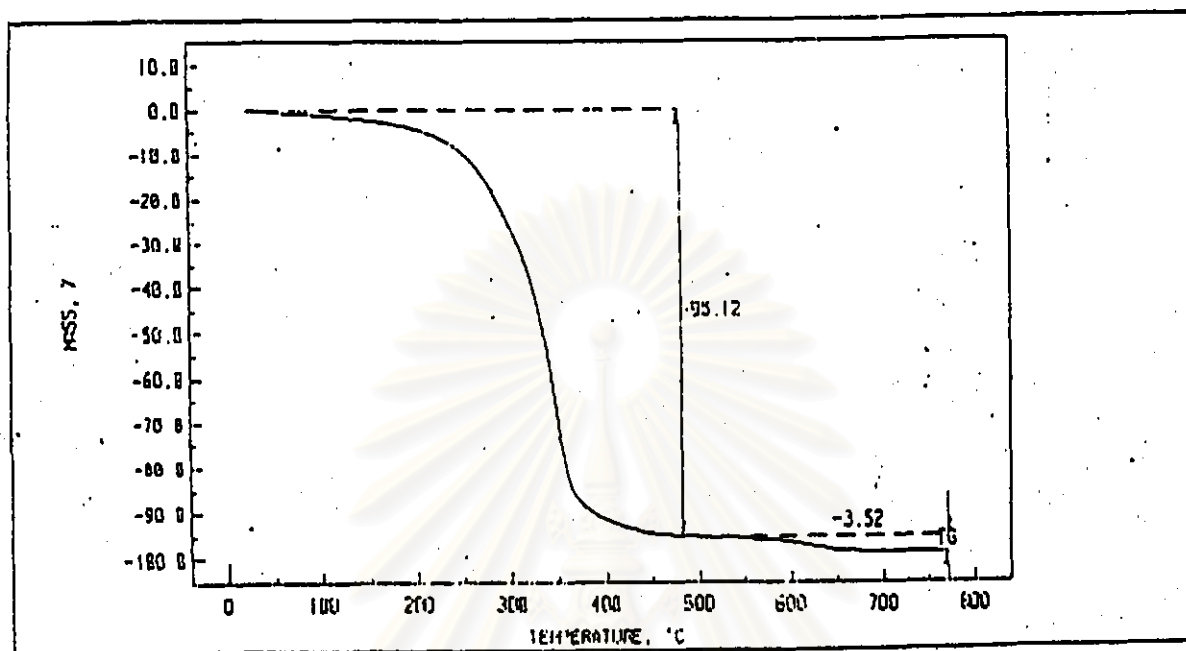


Figure C11: Thermogram of pentaerythritol tetrakis(nonanoate)

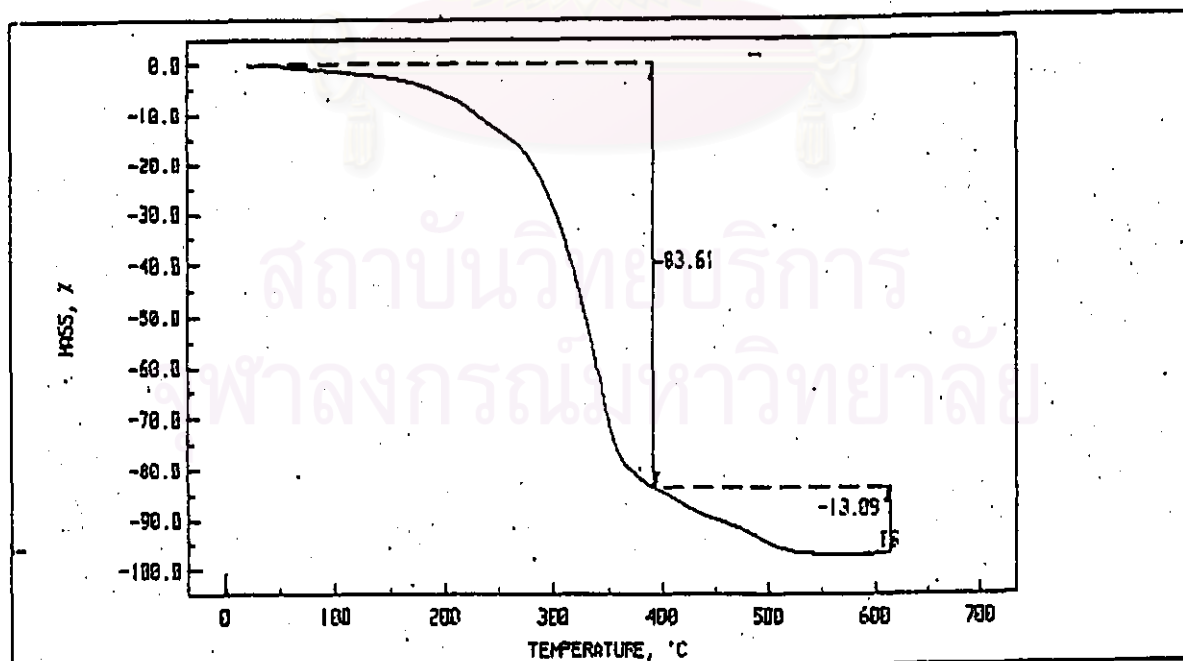


Figure C12: Thermogram of pentaerythritol tetrakis(2-ethyl-hexanoate)

VITA

Mr. Chokchai Suwanwuttiwat was born on July 11, 1972 in Bangkok, Thailand. He received a B.Sc. in Chemistry from the Faculty of Science, Rajabhat Institute Suandusit in 1994. He began his Master study at Petrochemistry and Polymer, Graduate School, Chulalongkorn University, in 1994 and complete the program in 1997.



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