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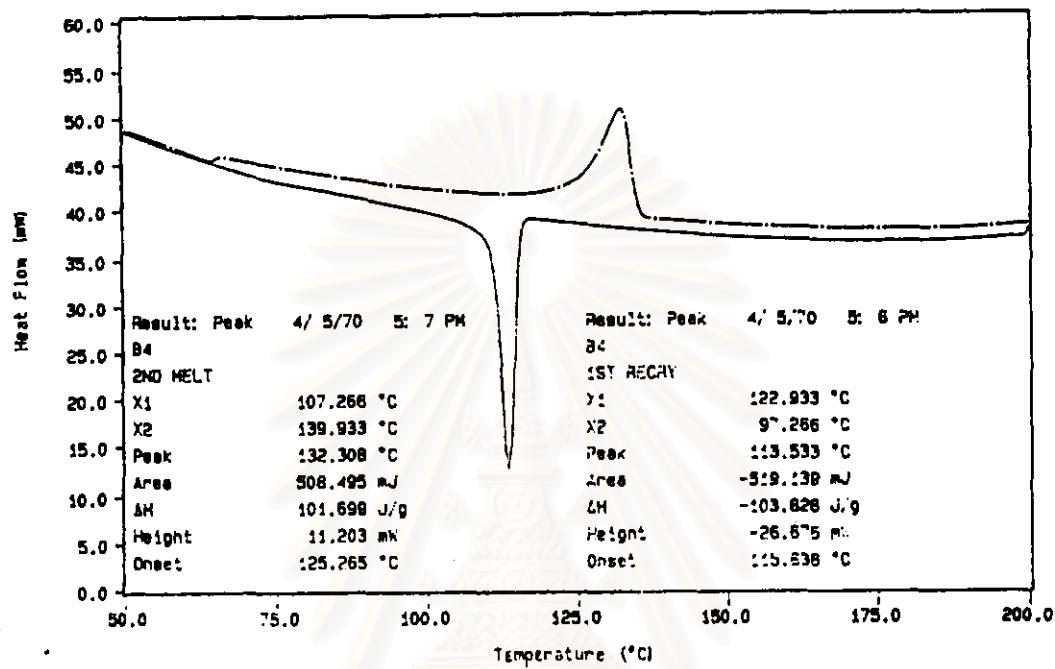
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## **APPENDICES**

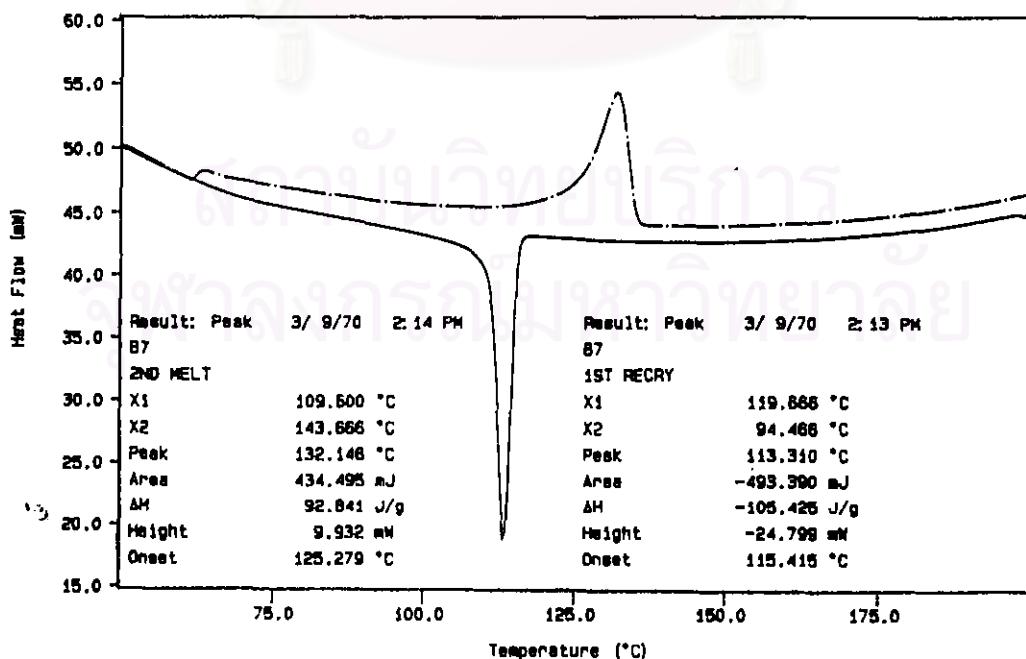
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## APPENDIX A

### DSC CURVE



**Figure A-1** DSC curve of polyethylene produced with  $\text{Al}_{(\text{TMA})}/\text{Zr}$  mole ratio of 500



**Figure A-2** DSC curve of polyethylene produced with  $\text{Al}_{(\text{TMA})}/\text{Zr}$  mole ratio of 1000

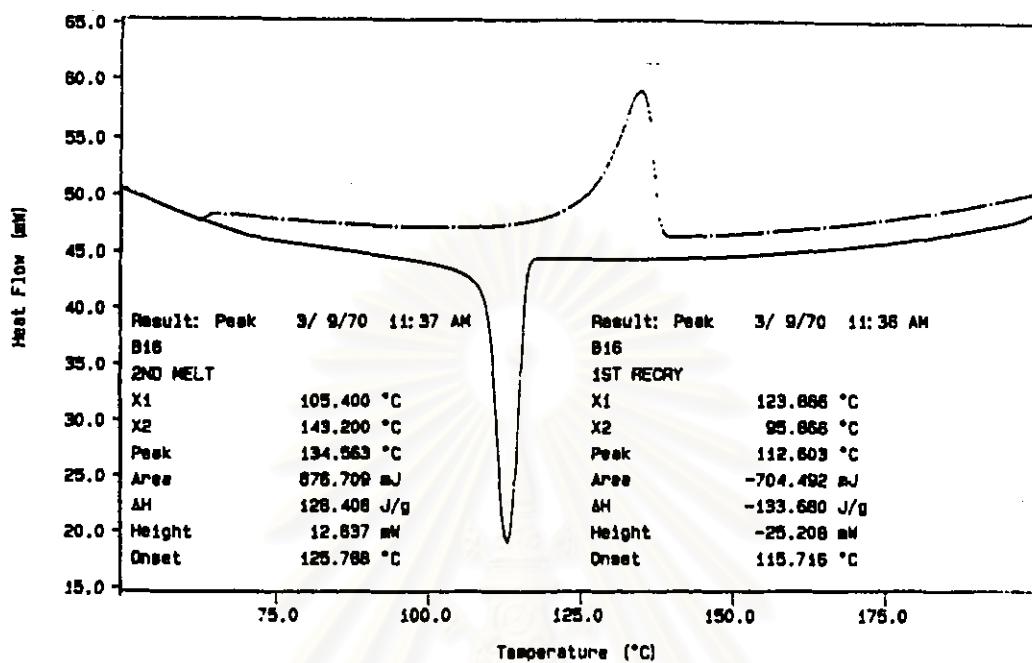


Figure A-3 DSC curve of polyethylene produced with  $\text{Al}_{(\text{TMA})}/\text{Zr}$  mole ratio of 3000

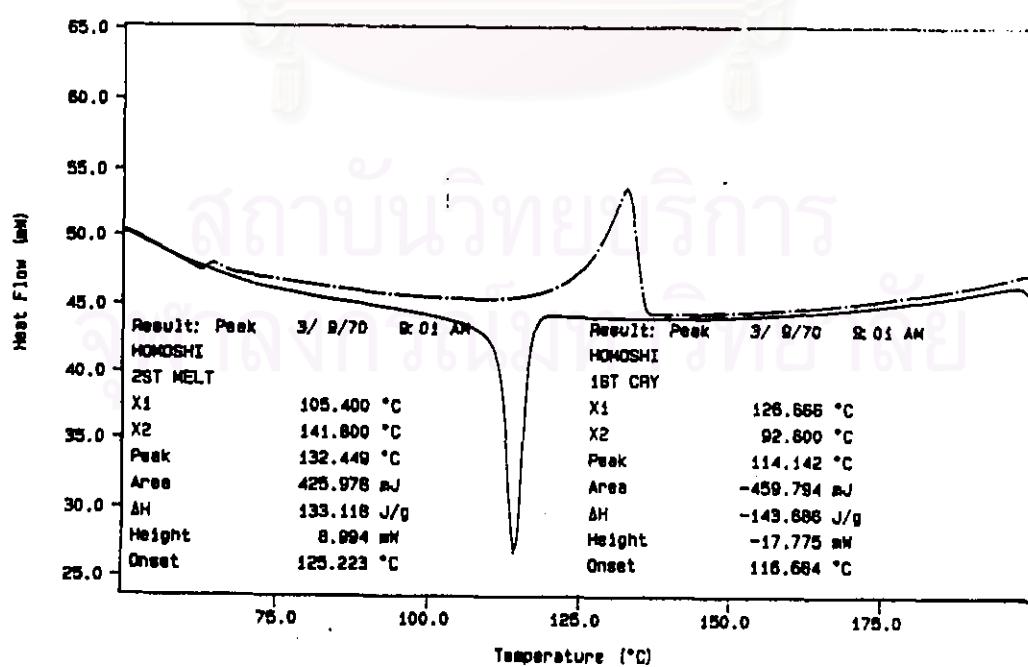
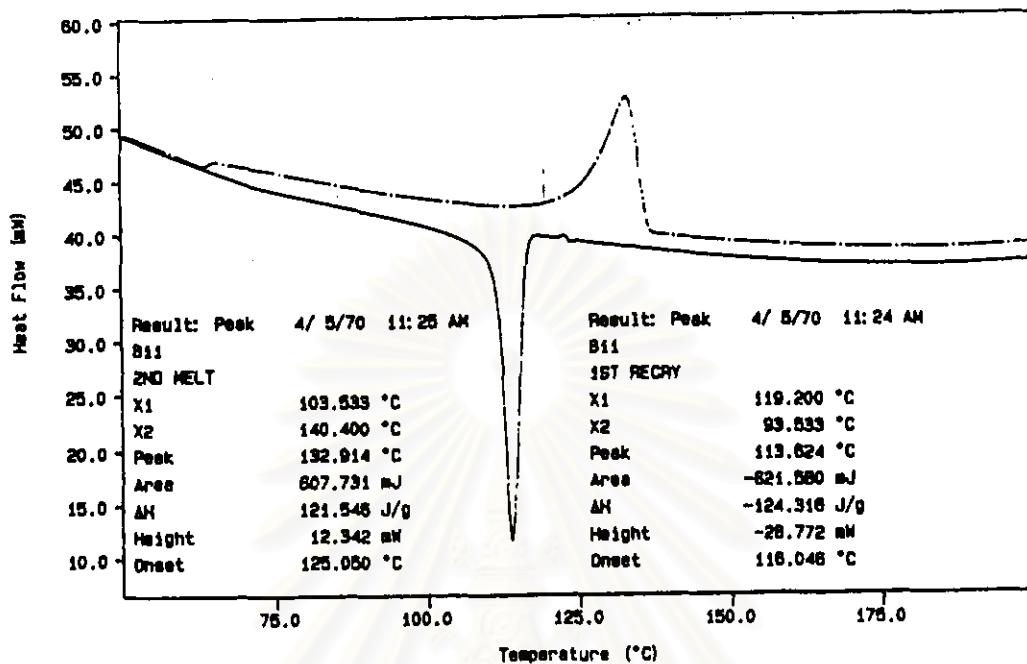
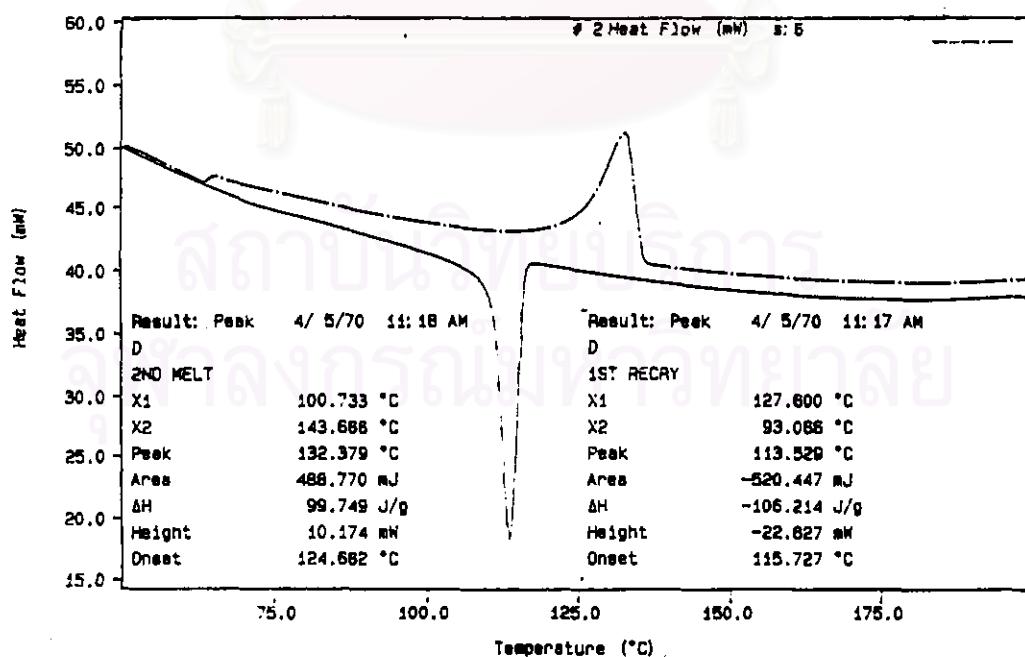


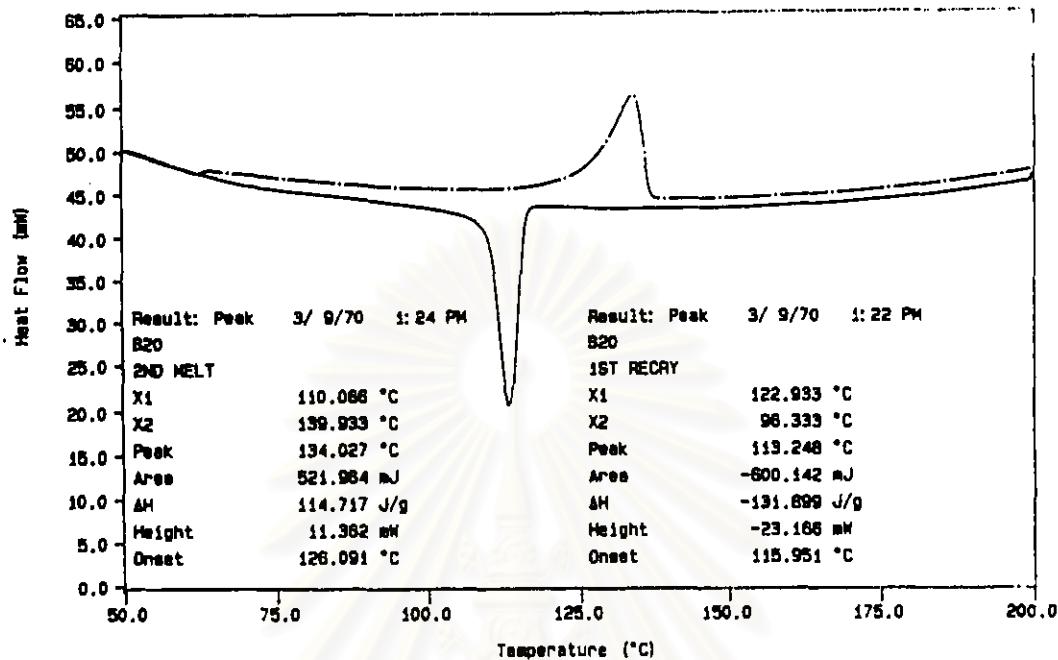
Figure A-4 DSC curve of polyethylene produced with  $\text{Al}_{(\text{TMA})}/\text{Zr}$  mole ratio of 4000



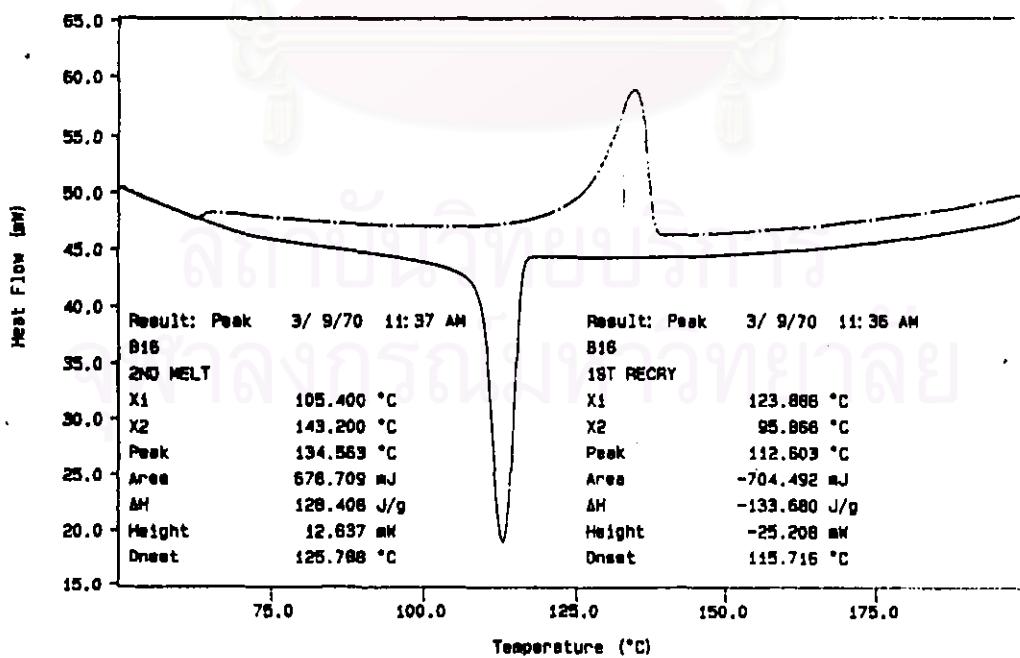
**Figure A-5** DSC curve of polyethylene produced with  $\text{Al}(\text{TMA})_2/\text{Zr}$  mole ratio of 5000



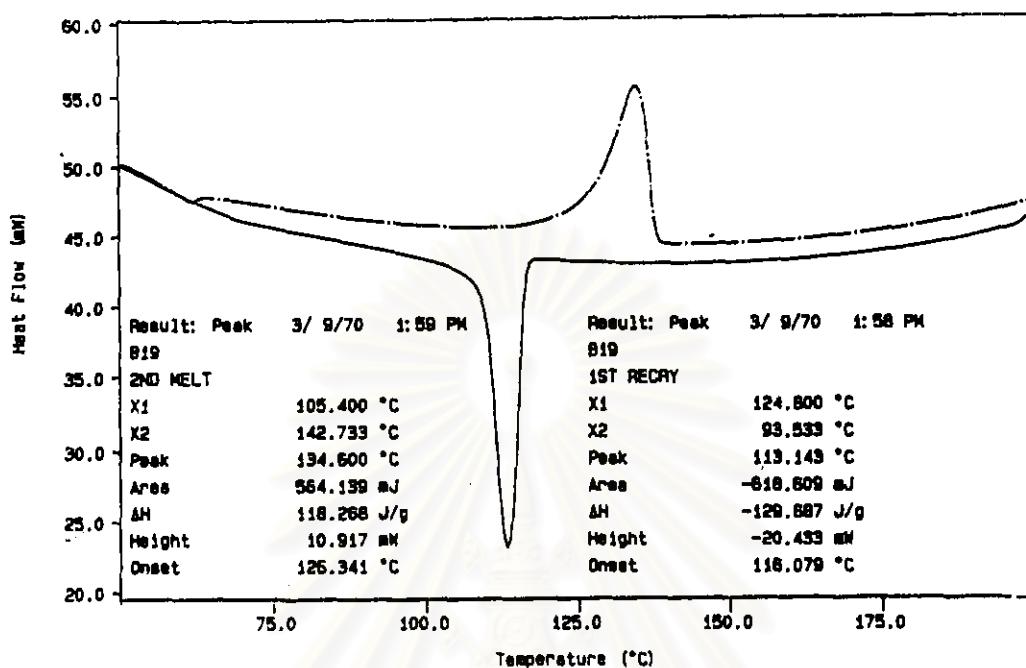
**Figure A-6** DSC curve of polyethylene produced with catalyst concentration of  $3.3333 \times 10^{-5} \text{ M}$



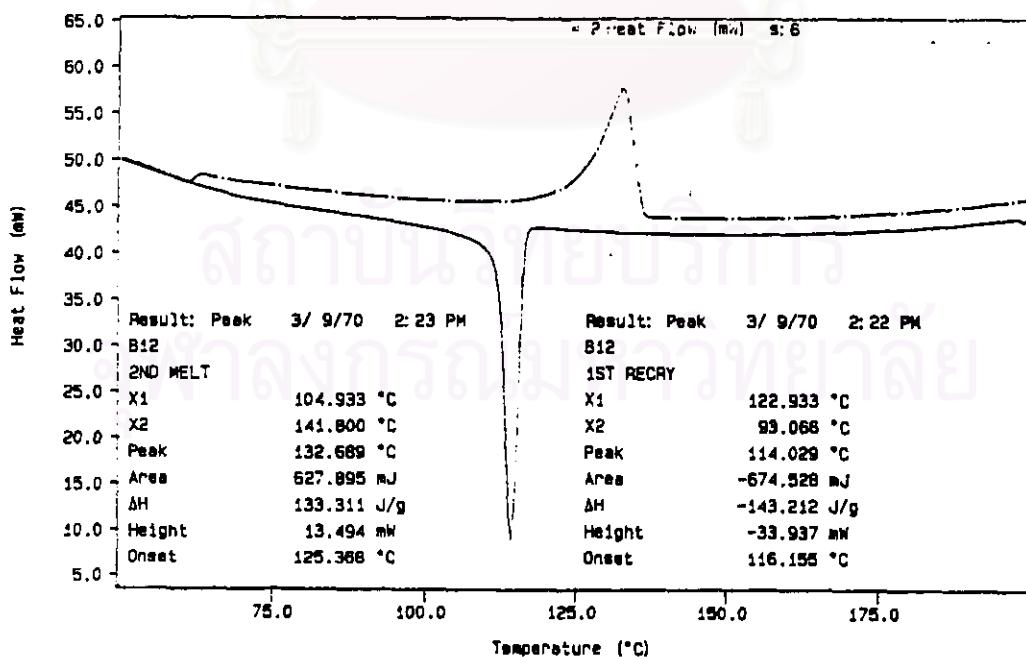
**Figure A-7** DSC curve of polyethylene produced with catalyst concentration of  $5.0000 \times 10^{-5} \text{ M}$



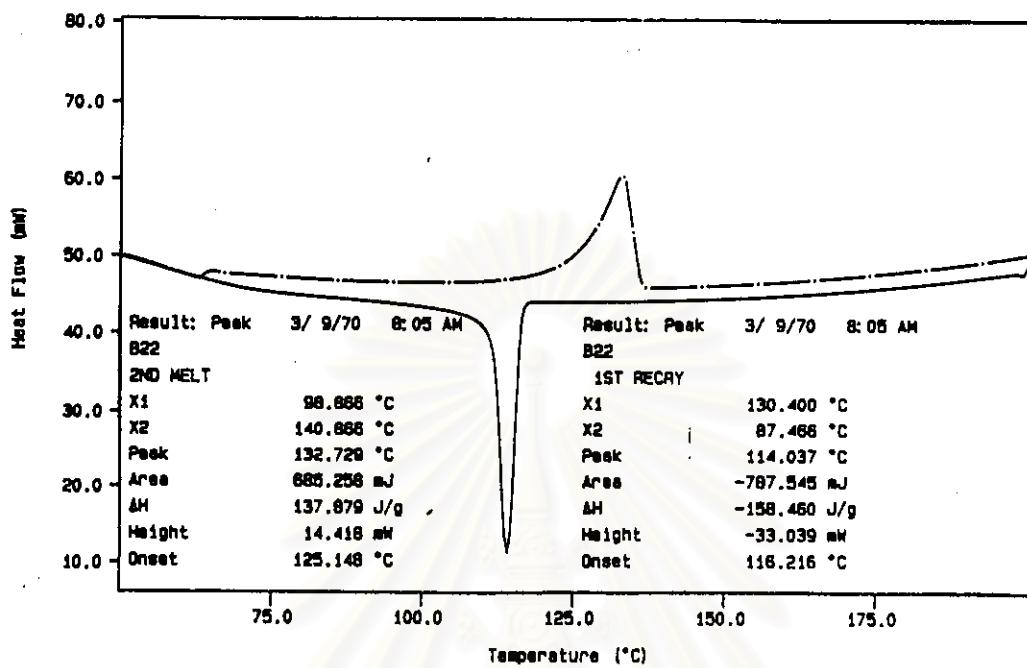
**Figure A-8** DSC curve of polyethylene produced with catalyst concentration of  $6.6667 \times 10^{-5} \text{ M}$



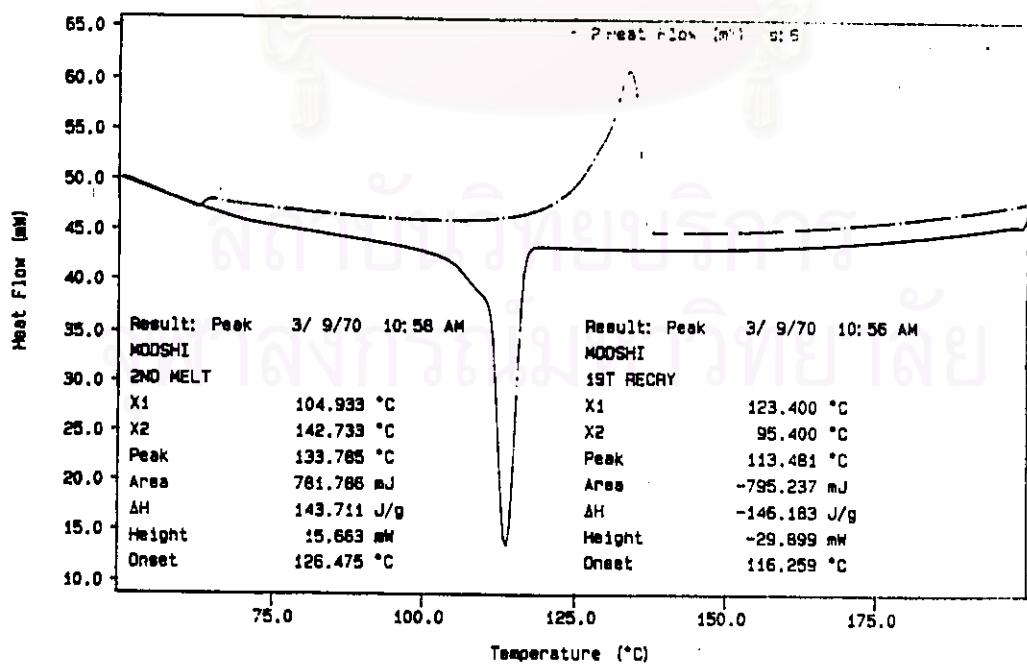
**Figure A-9** DSC curve of polyethylene produced with catalyst concentration of  $8.3333 \times 10^{-5} \text{ M}$



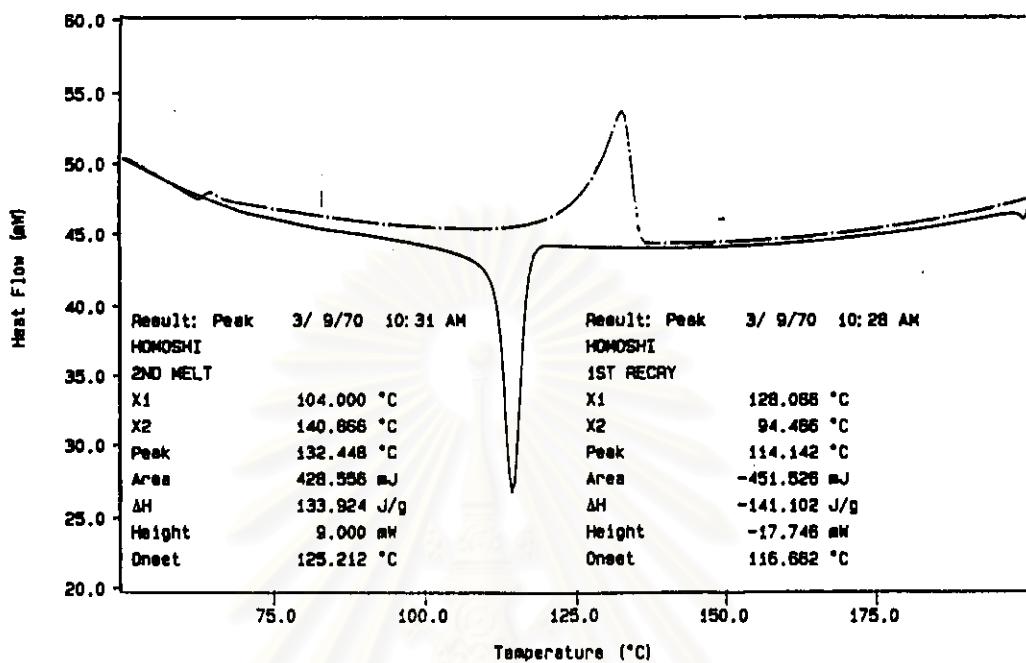
**Figure A-10** DSC curve of polyethylene produced at polymerization temperature of 30°C



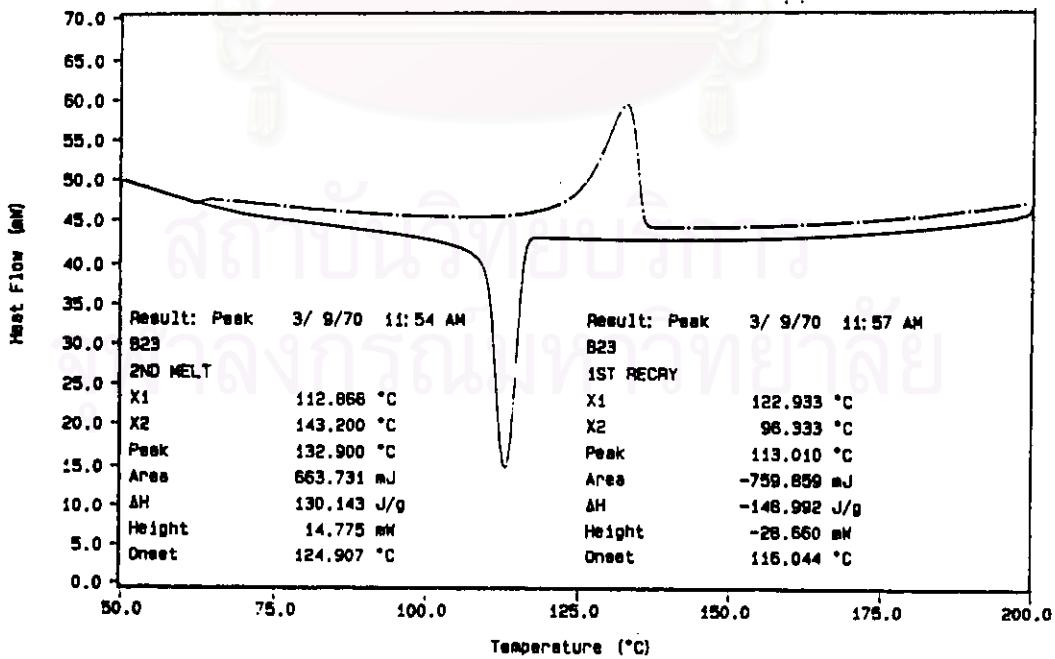
**Figure A-11** DSC curve of polyethylene produced at polymerization temperature of 40°C



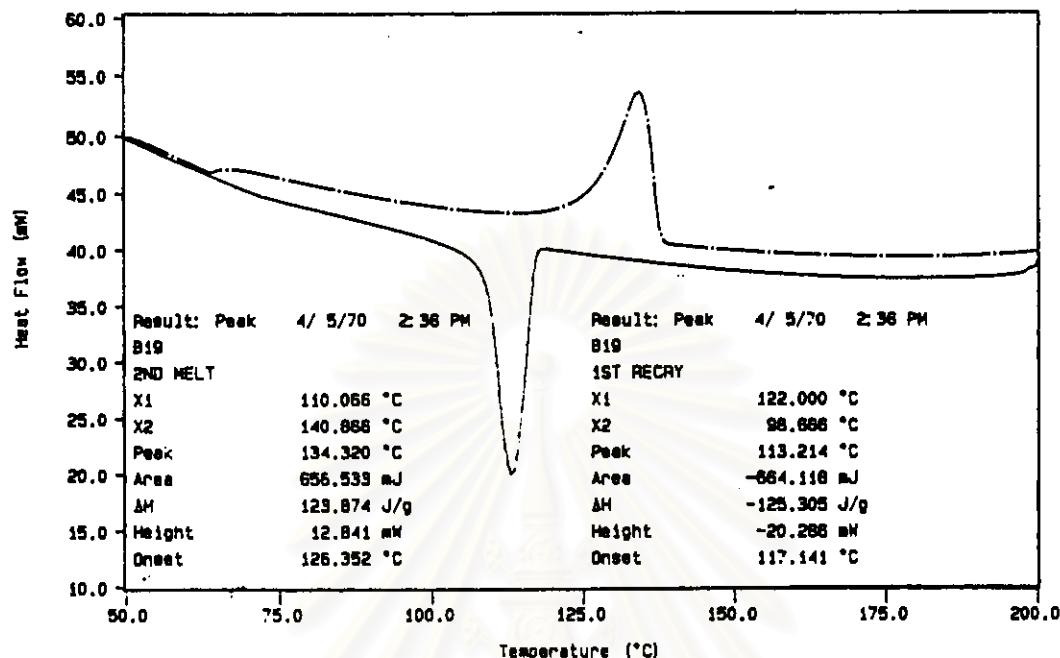
**Figure A-12** DSC curve of polyethylene produced at polymerization temperature of 50°C



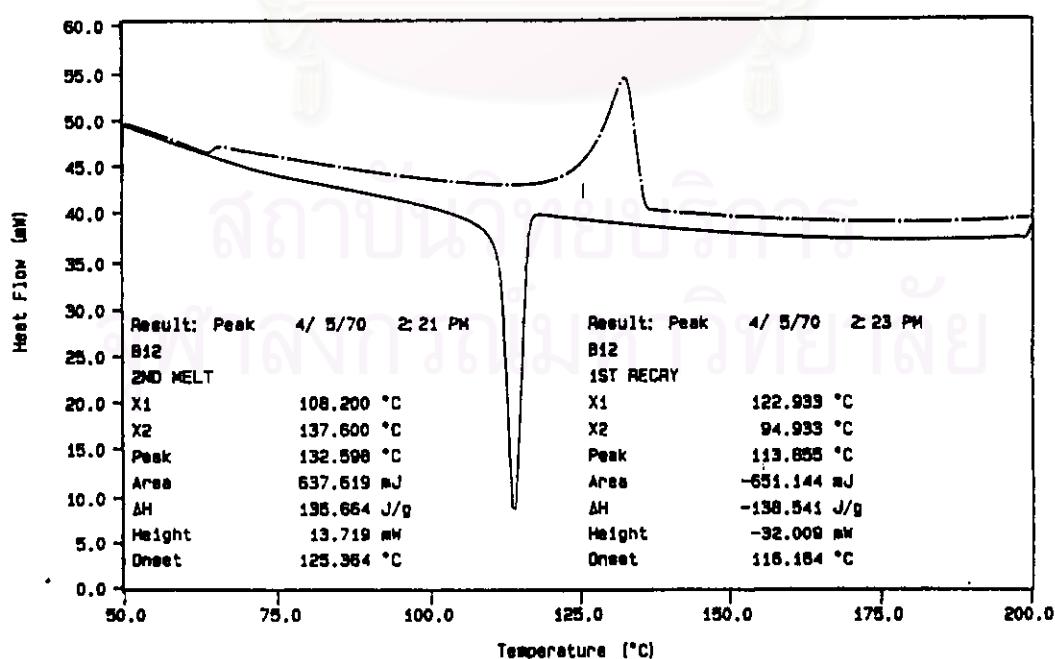
**Figure A-13** DSC curve of polyethylene produced at polymerization temperature of 60°C



**Figure A-14** DSC curve of polyethylene produced at polymerization temperature of 80°C



**Figure A-15** DSC curve of polyethylene produced at ethylene pressure of 30 psi



**Figure A-16** DSC curve of polyethylene produced at ethylene pressure of 50 psi

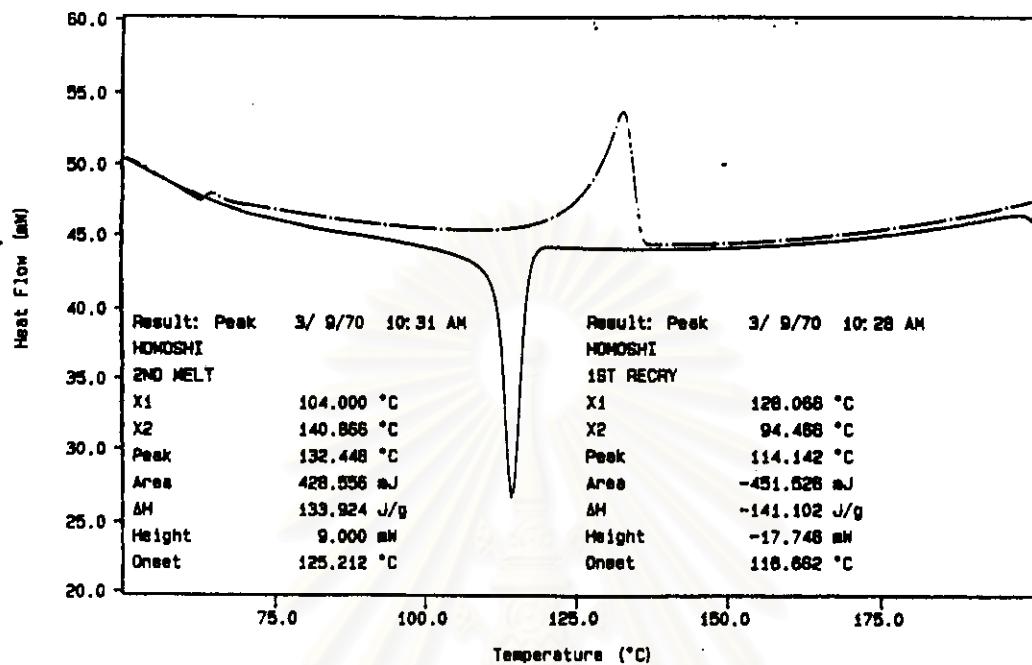


Figure A-17 DSC curve of polyethylene produced at ethylene pressure of 80 psi

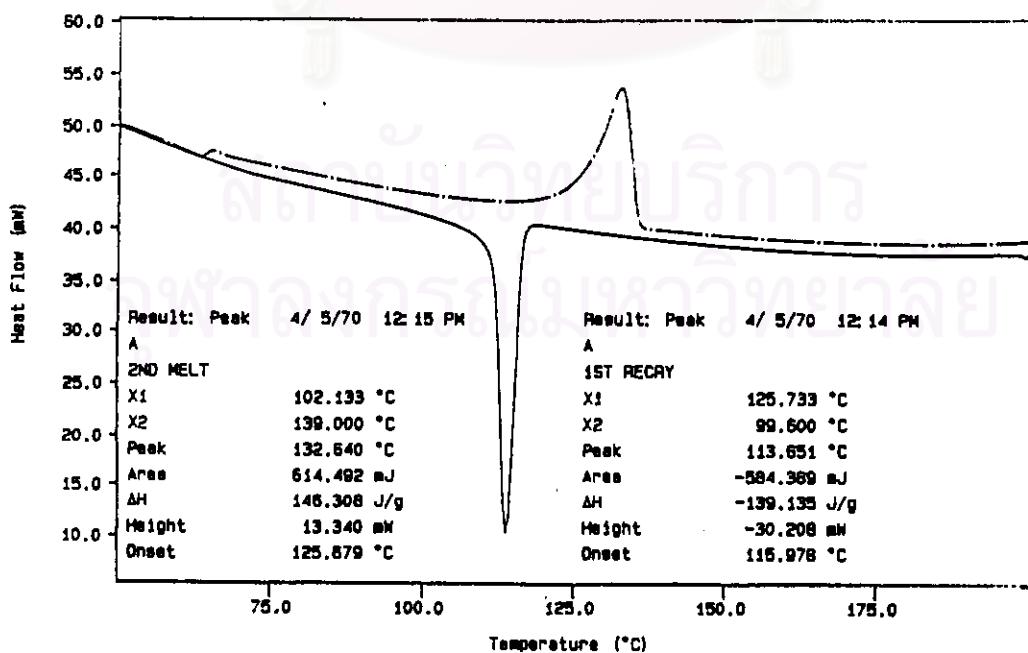


Figure A-18 DSC curve of polyethylene produced with  $\text{ClSiMe}_3$

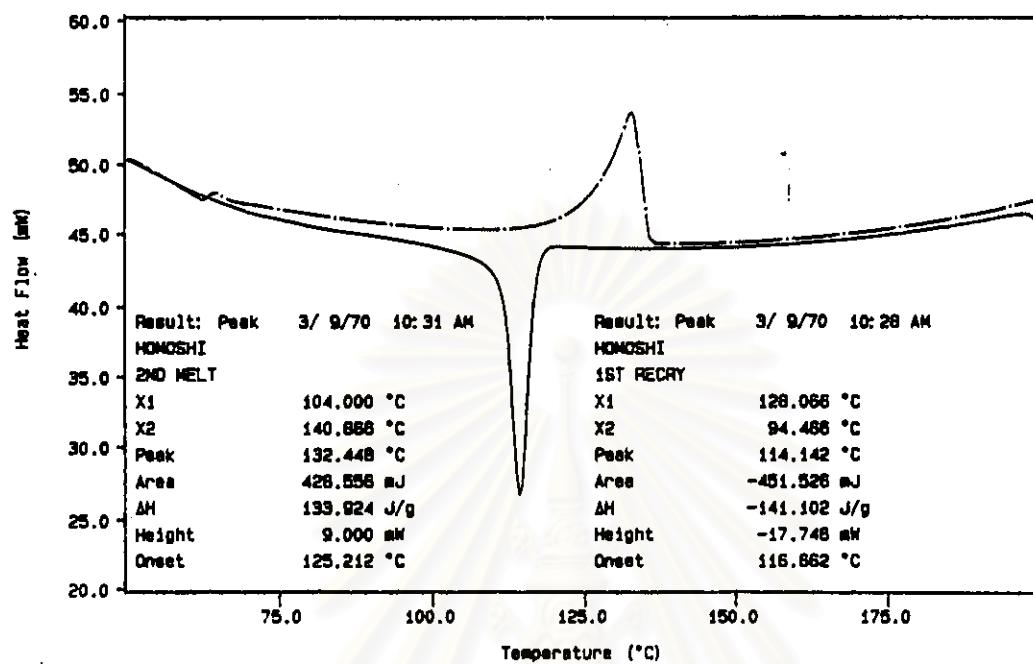


Figure A-19 DSC curve of polyethylene produced with  $\text{Cl}_2\text{SiMe}_2$

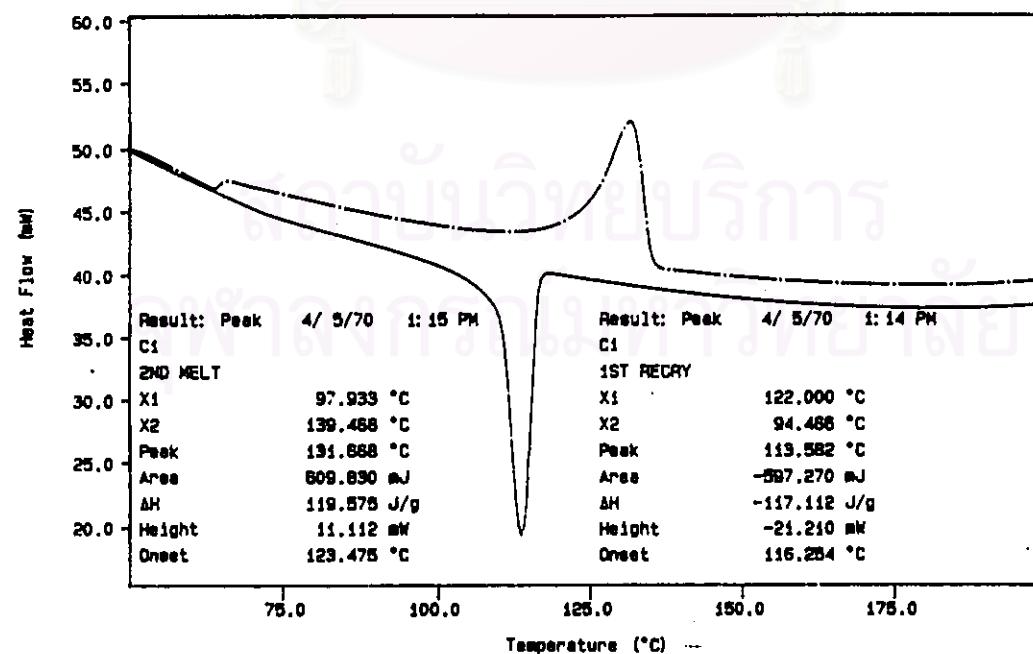


Figure A-20 DSC curve of polyethylene produced with  $\text{Cl}_3\text{SiMe}$

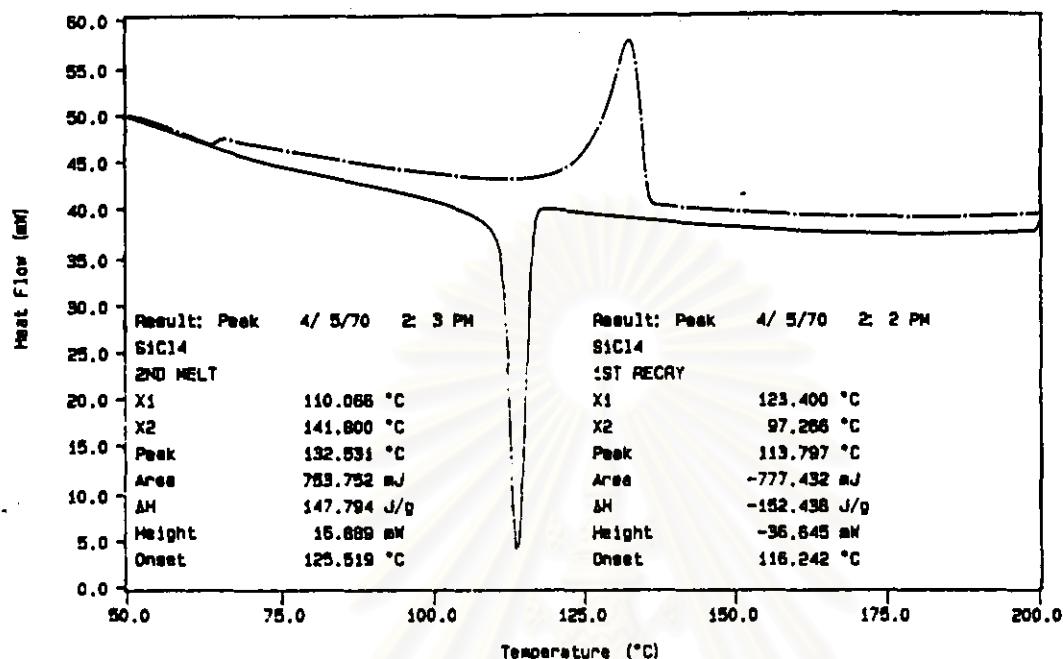


Figure A-22 DSC curve of polyethylene produced with SiCl<sub>4</sub>

**APPENDIX B**  
**GPC CURVE**

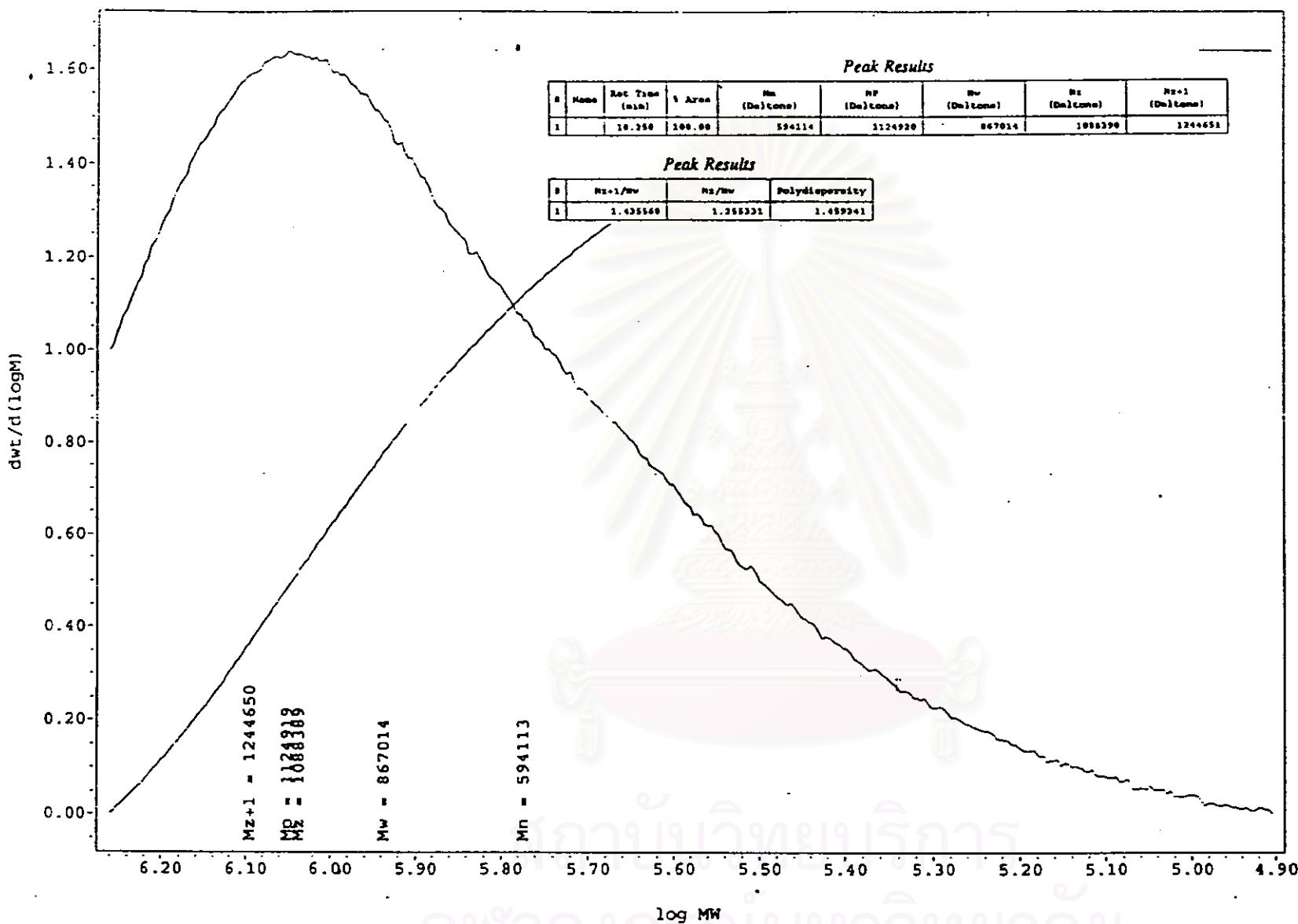


Figure B-1 GPC curve of polyethylene produced with Al<sub>(TMA)</sub>/Zr mole ratio of 1000

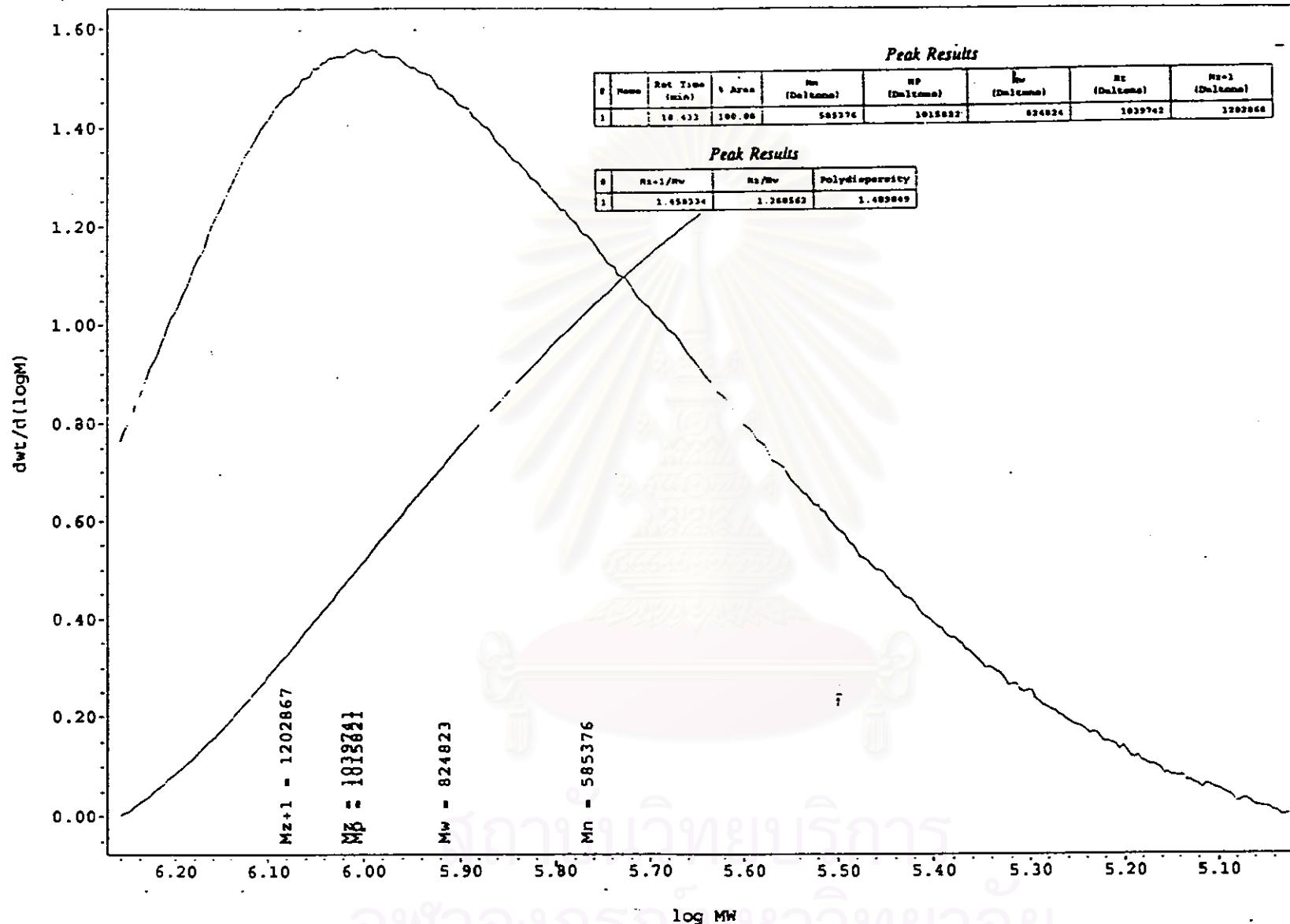


Figure B-2 GPC curve of polyethylene produced with  $Al_{(TMA)}/Zr$  mole ratio of 3000

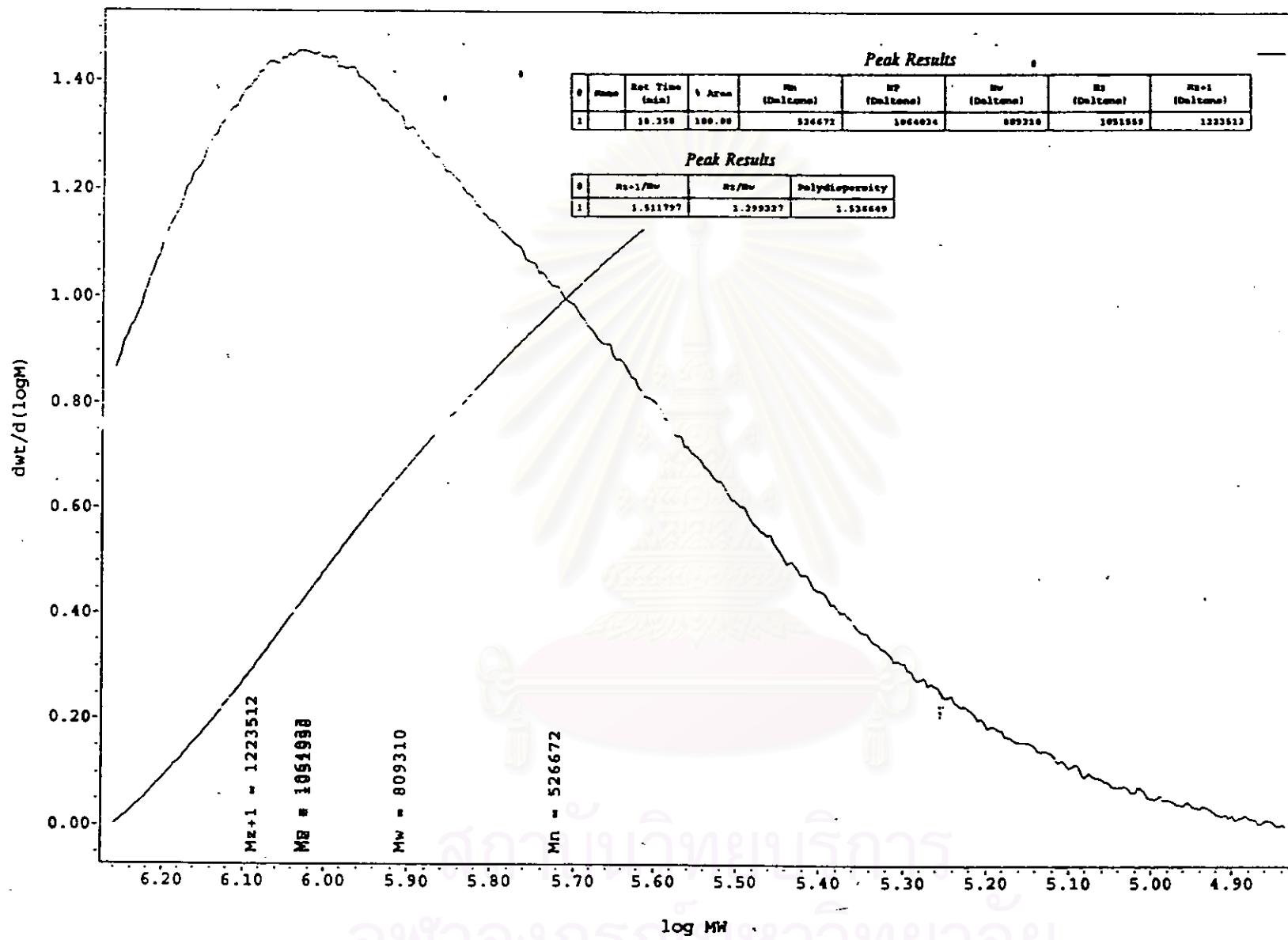


Figure B-3 GPC curve of polyethylene produced with  $Al_{(TMA)}/Zr$  mole ratio of 4000

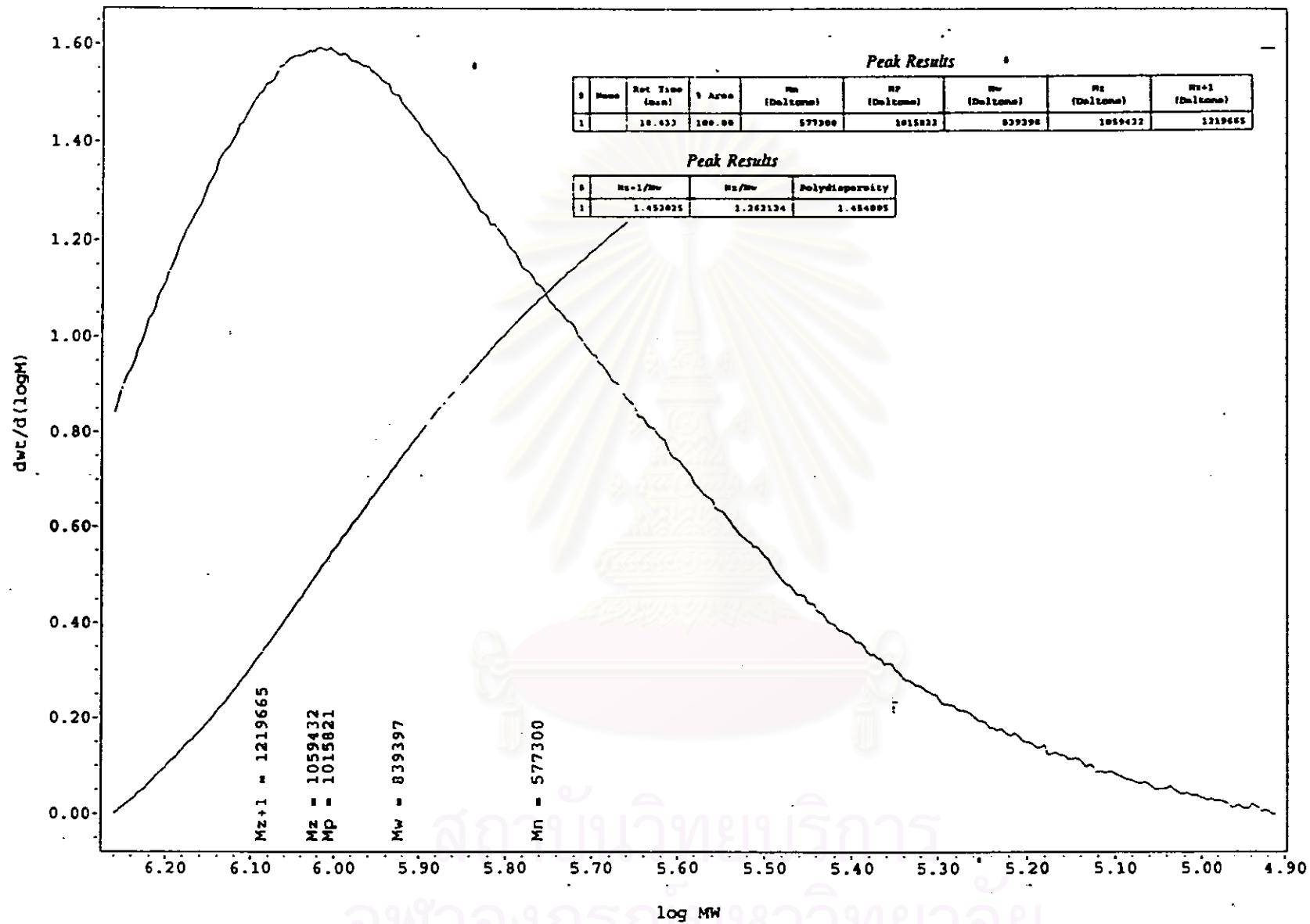


Figure B-4 GPC curve of polyethylene produced with catalyst concentration of  $5.0000 \times 10^{-5}$  M

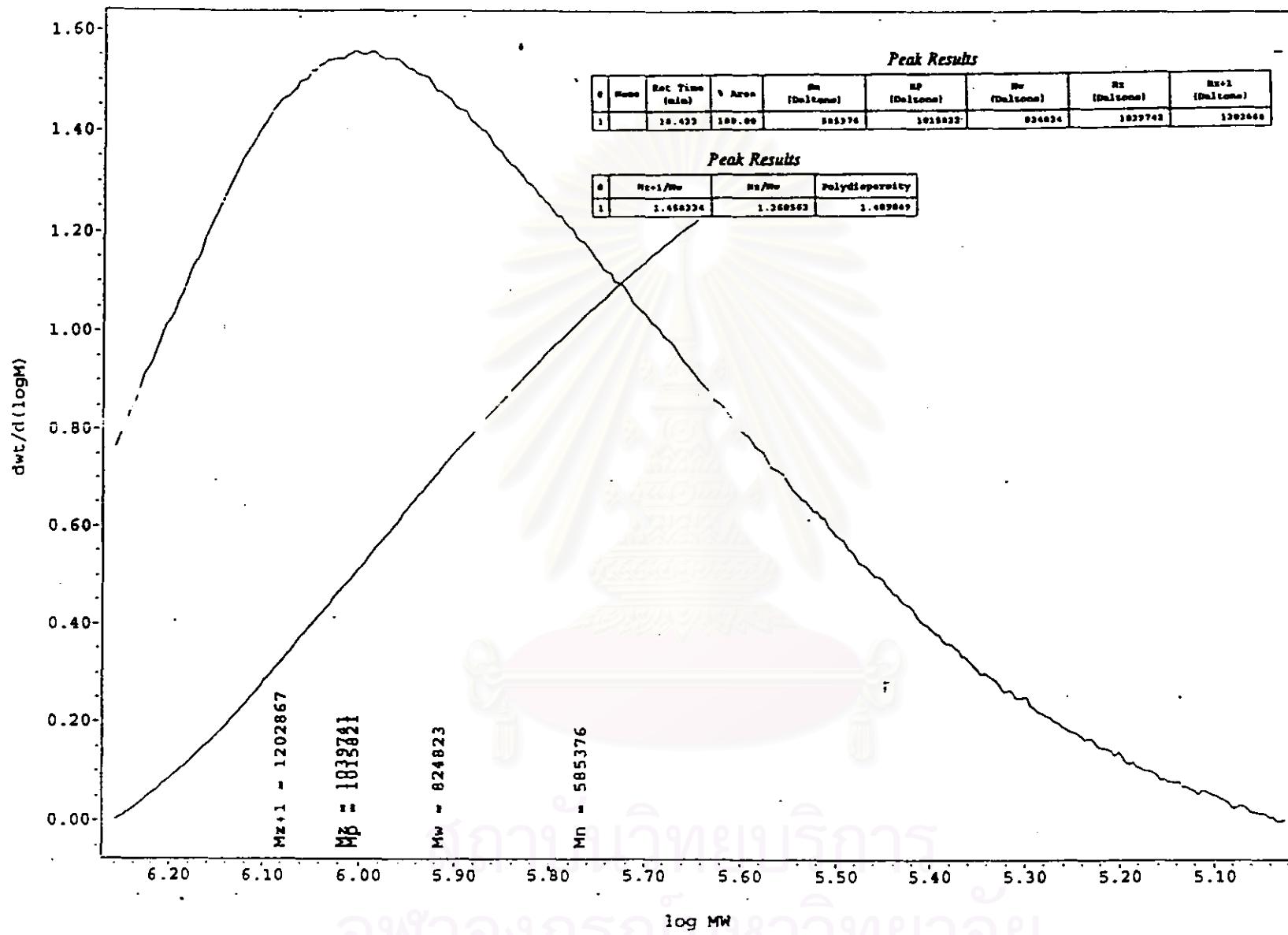


Figure B-5 GPC curve of polyethylene produced with catalyst concentration of  $6.6667 \times 10^{-5} \text{ M}$

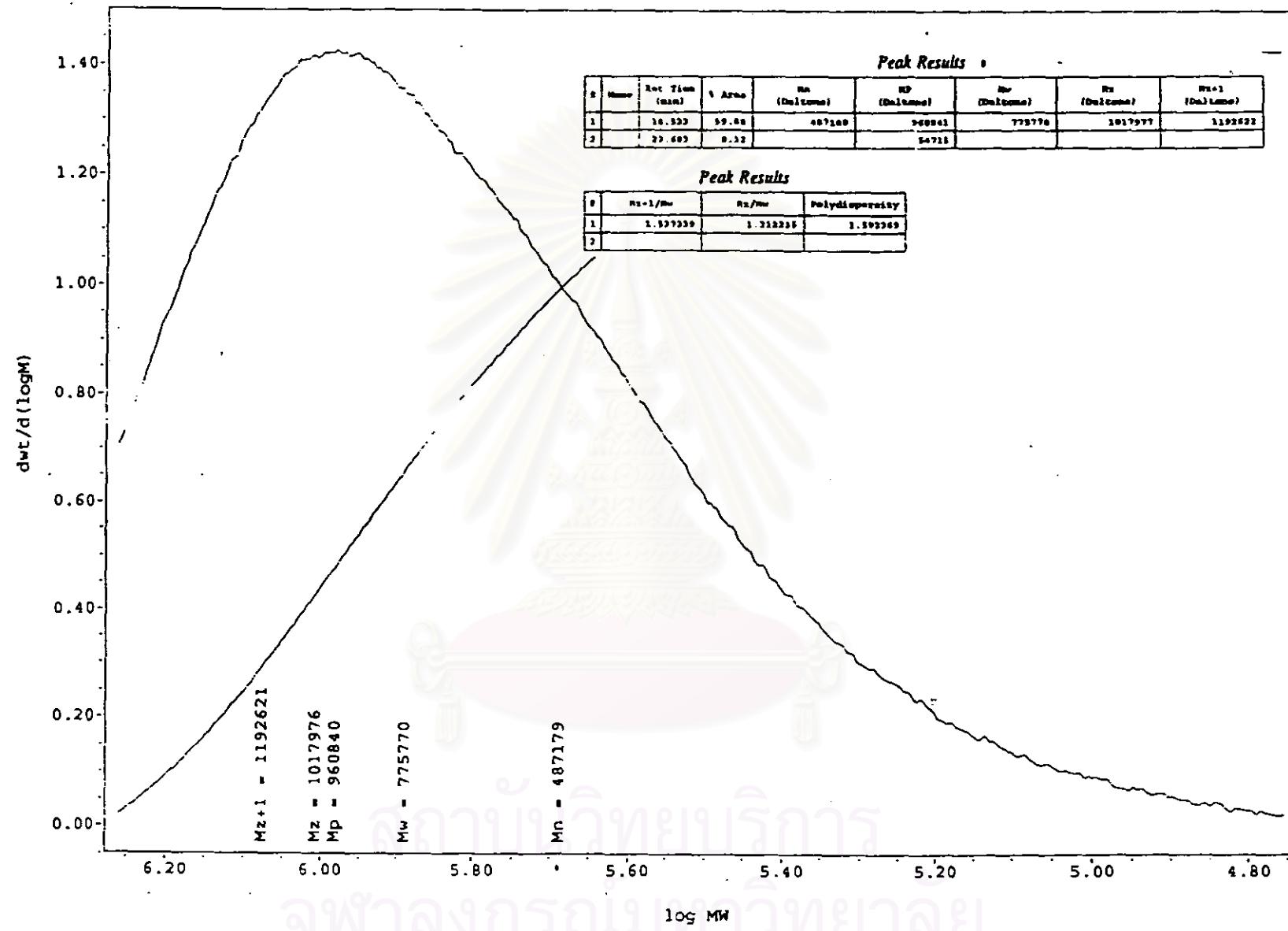


Figure B-6 GPC curve of polyethylene produced with catalyst concentration of  $8.3333 \times 10^{-5} M$

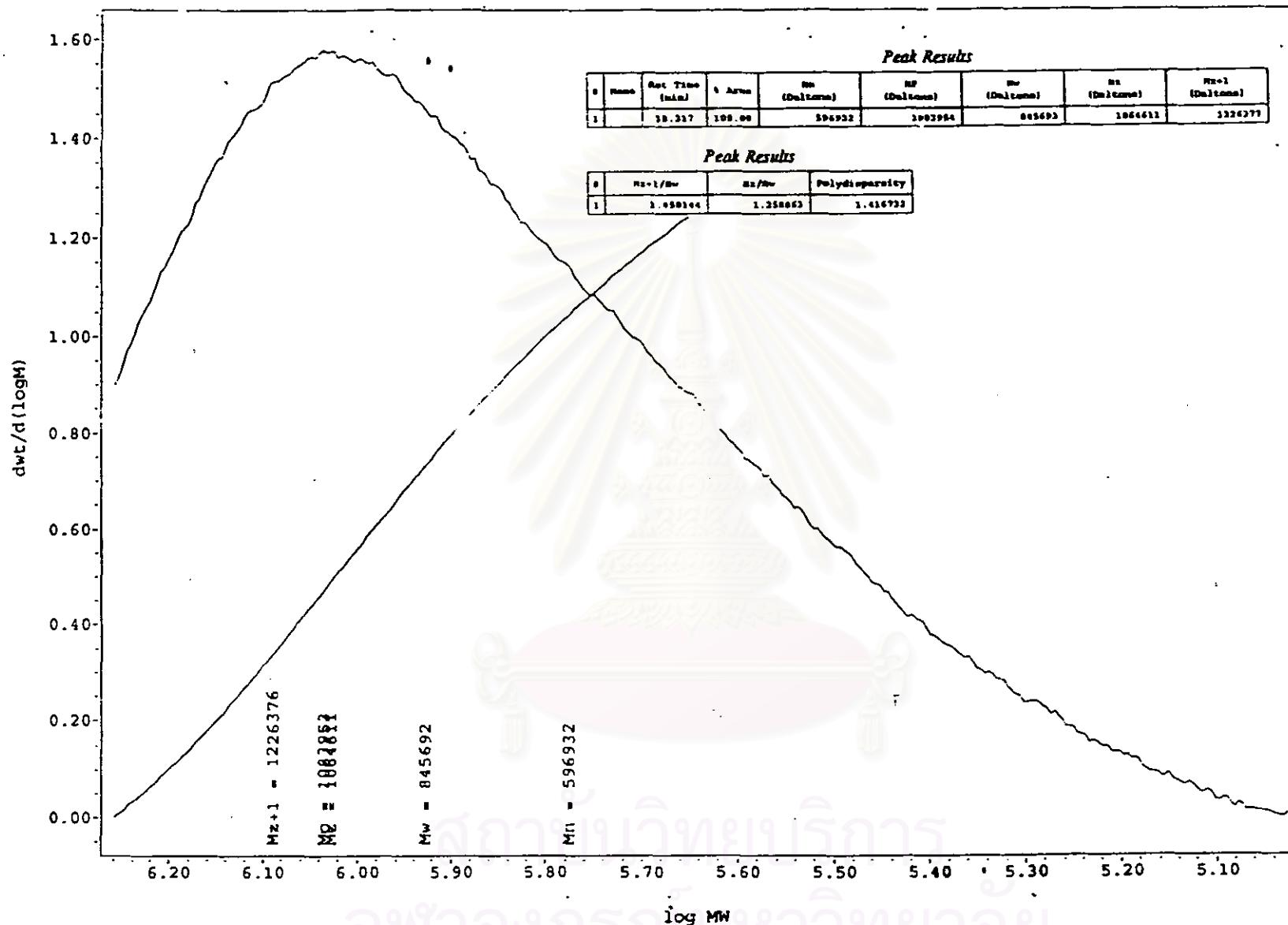


Figure B-7 GPC curve of polyethylene produced at polymerization temperature of 40°C

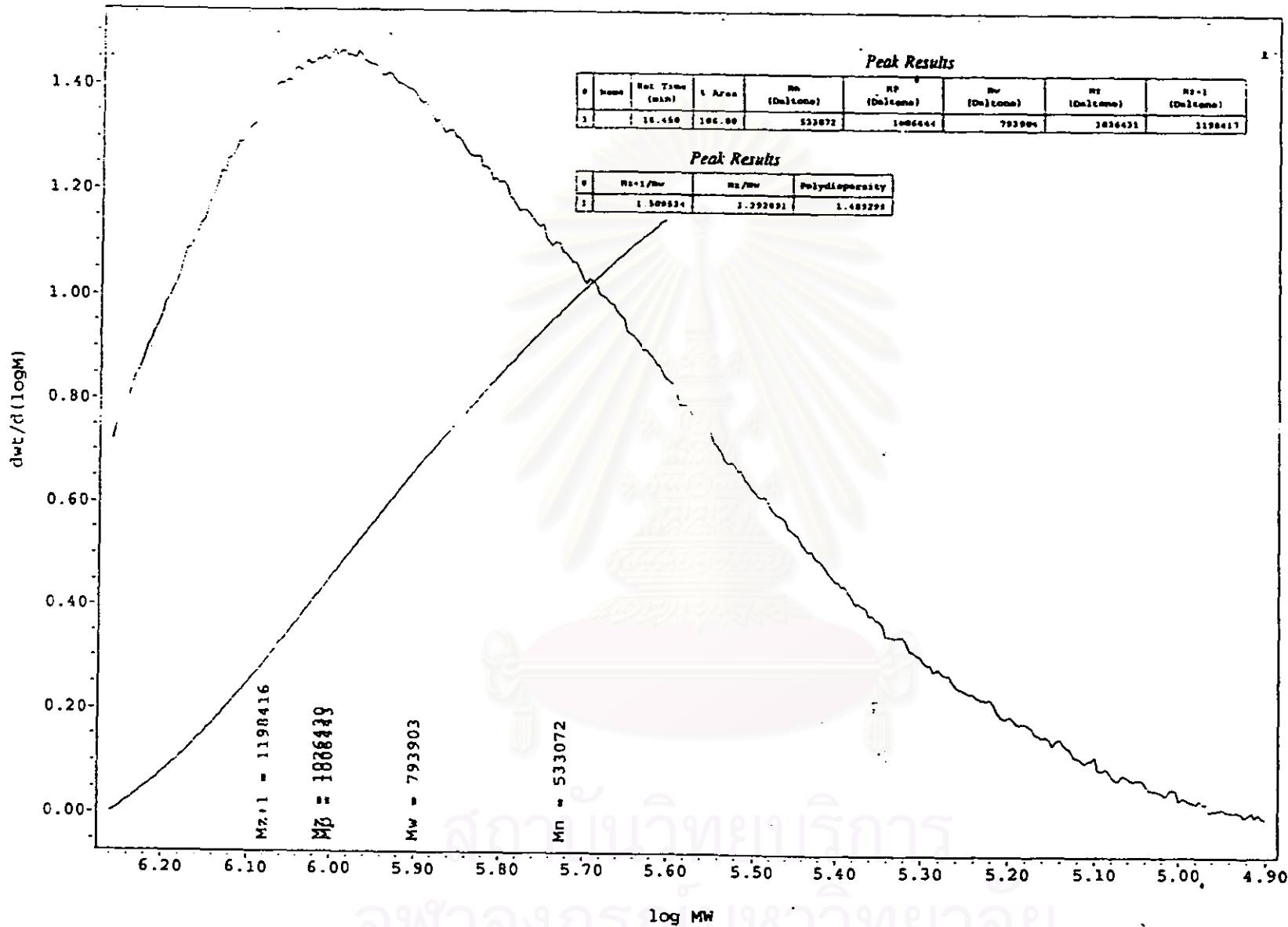


Figure B-8 GPC curve of polyethylene produced at polymerization temperature of 60°C

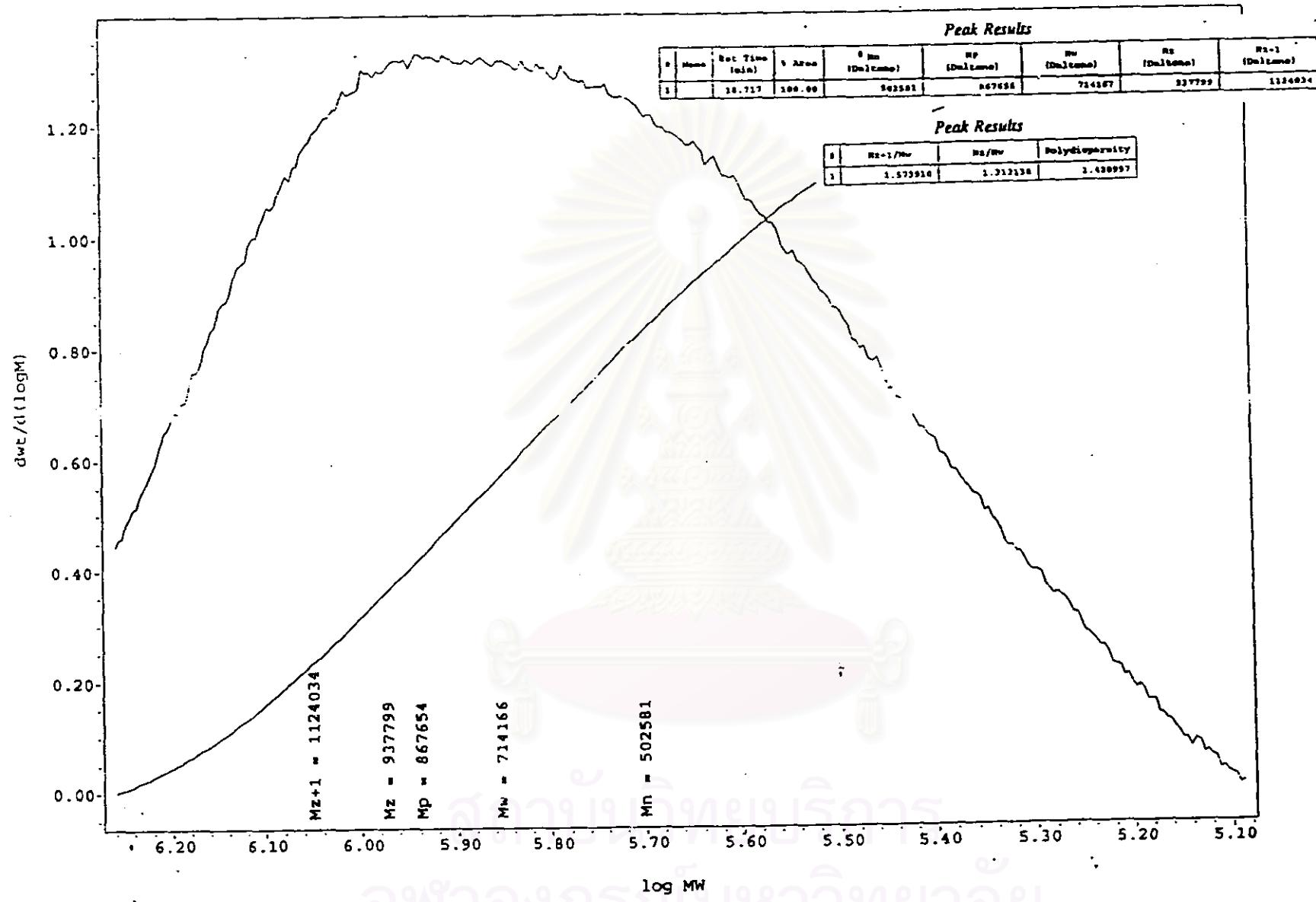


Figure B-9 GPC curve of polyethylene produced at polymerization temperature of 80°C

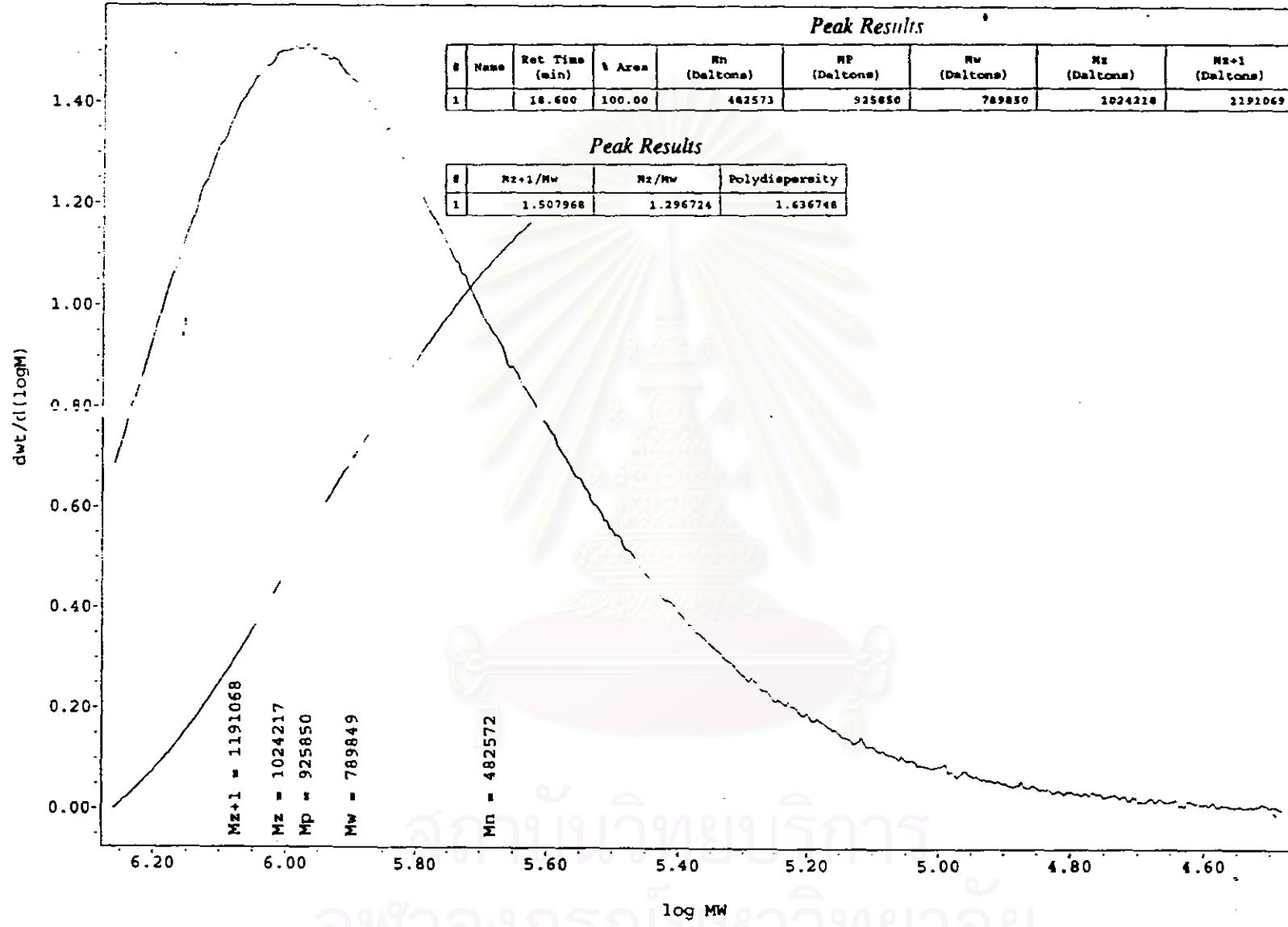


Figure B-10 GPC curve of polyethylene produced at ethylene pressure of 30 psi

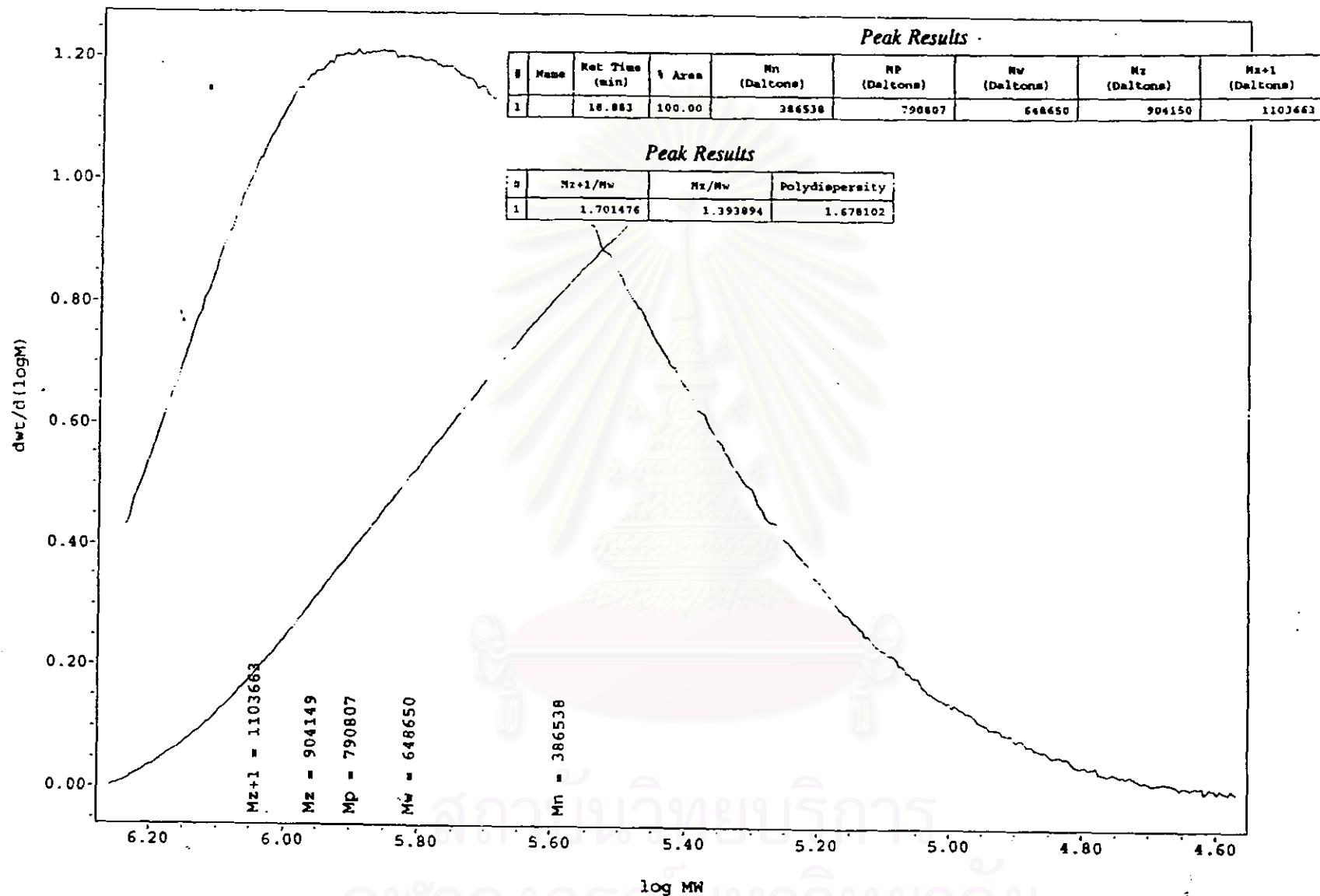


Figure B-11 GPC curve of polyethylene produced at ethylene pressure of 70 psi

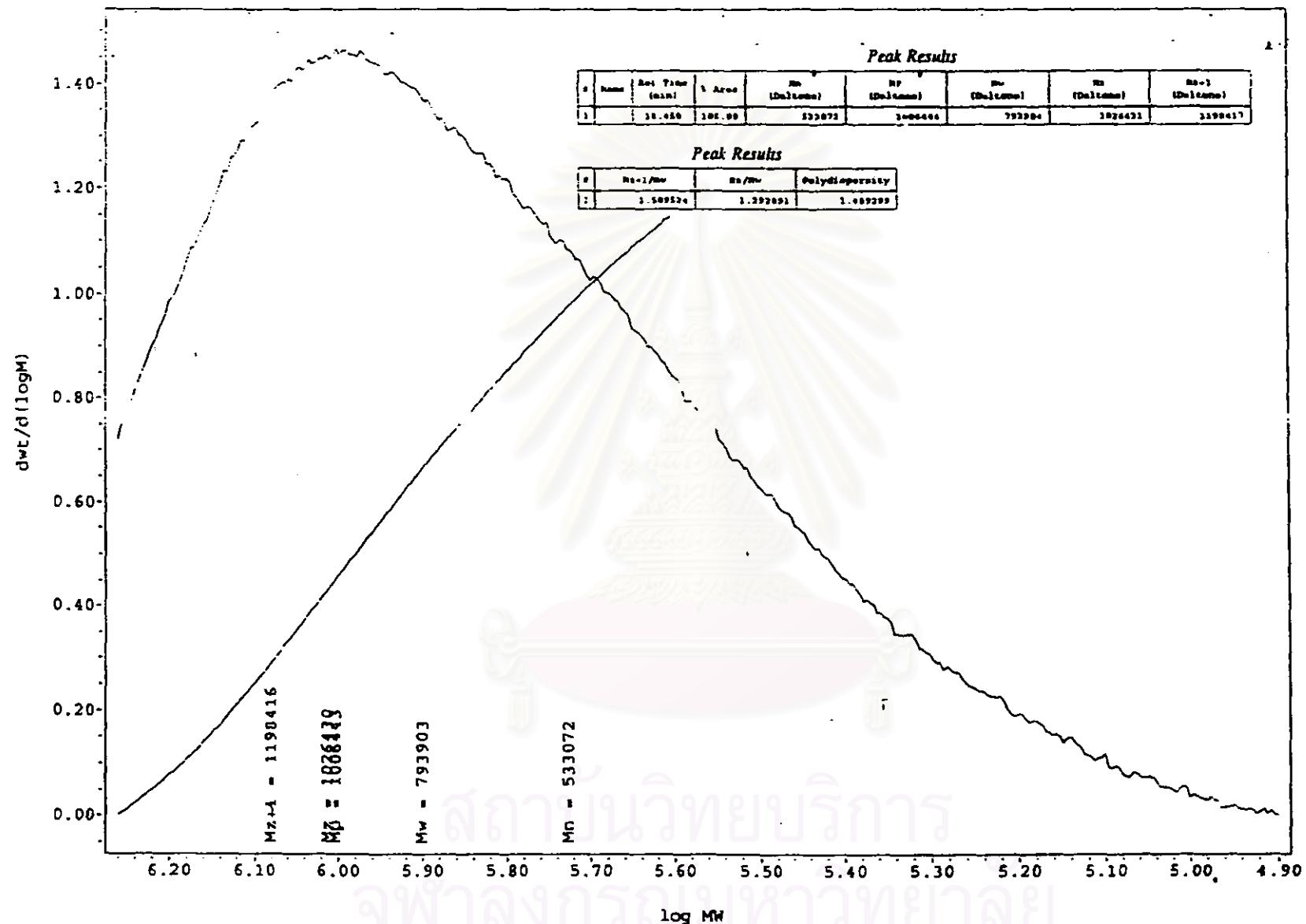


Figure B-12 GPC curve of polyethylene produced at ethylene pressure of 80 psi

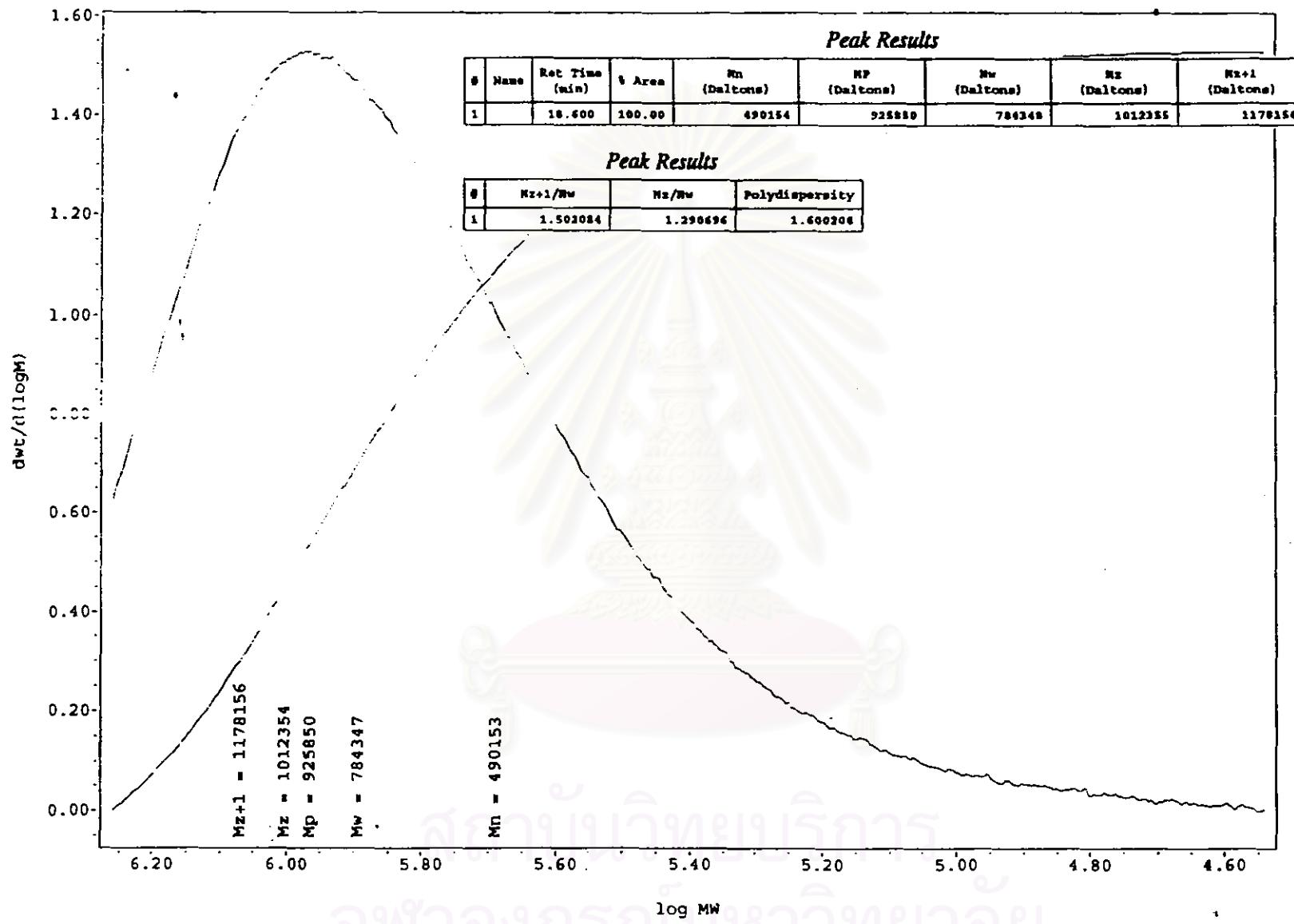


Figure B-13 GPC curve of polyethylene produced with ClSiMe<sub>3</sub>

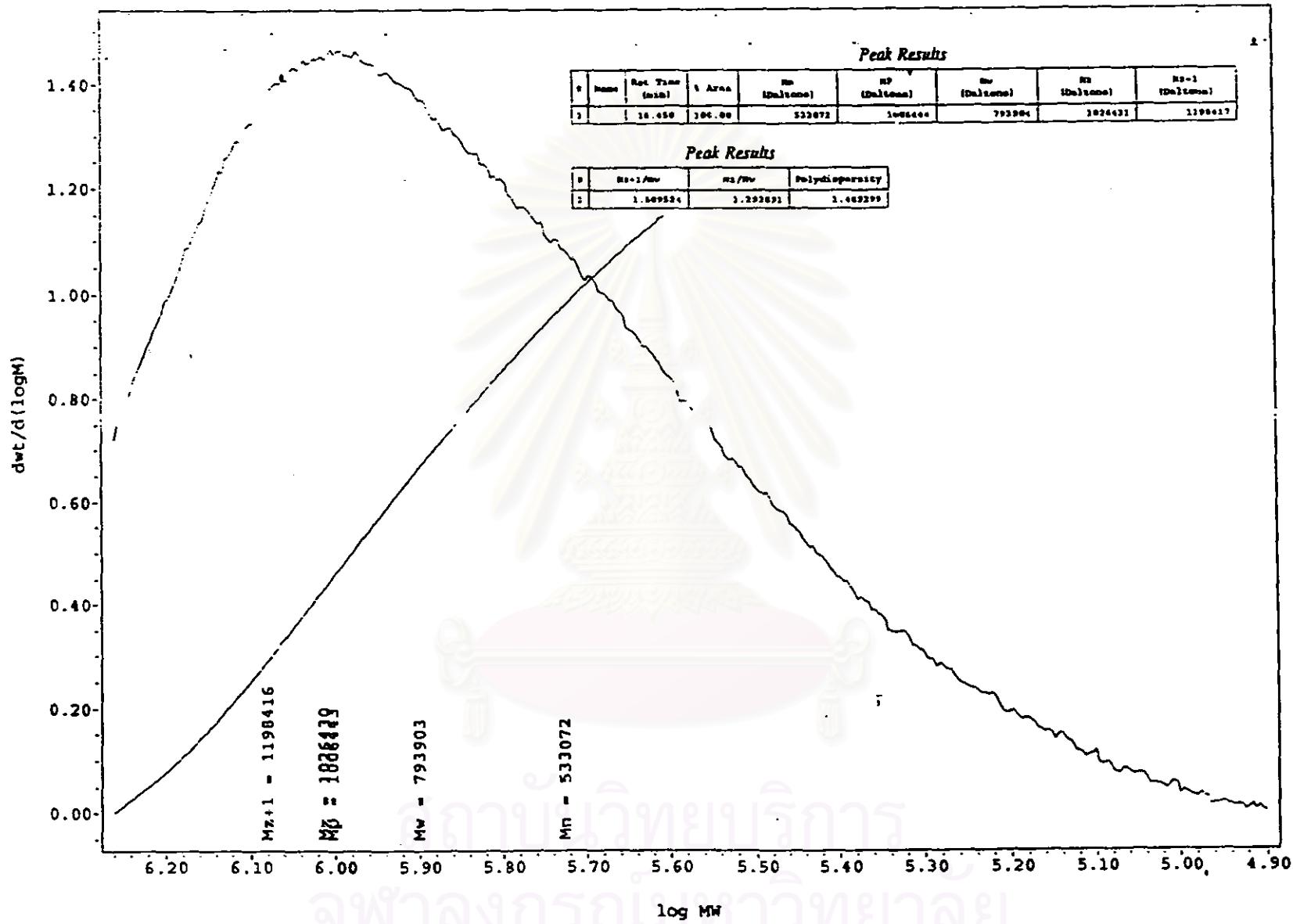


Figure B-14 GPC curve of polyethylene produced with  $\text{Cl}_2\text{SiMe}_2$

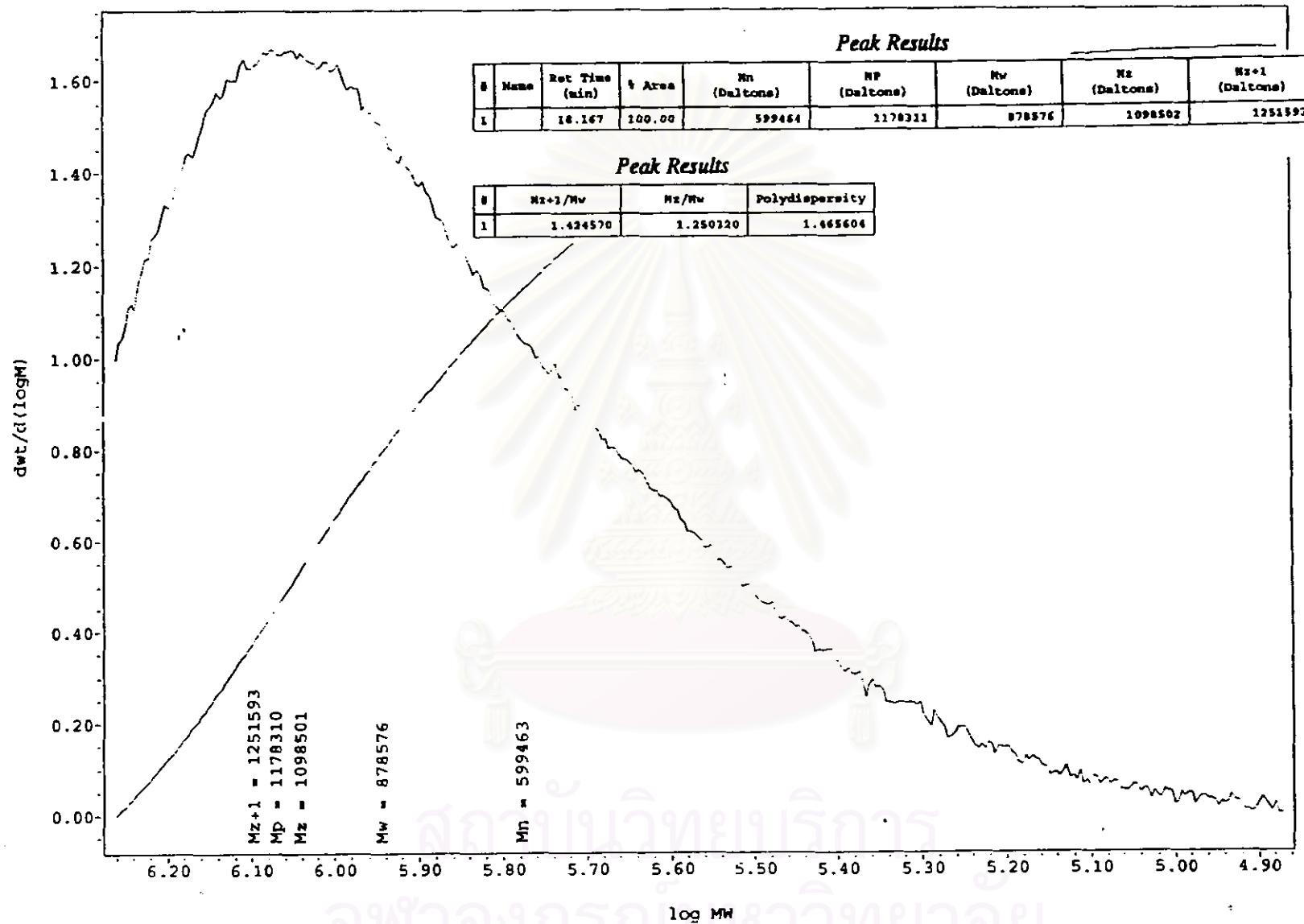


Figure B-15 GPC curve of polyethylene produced with  $\text{Cl}_3\text{SiMe}$

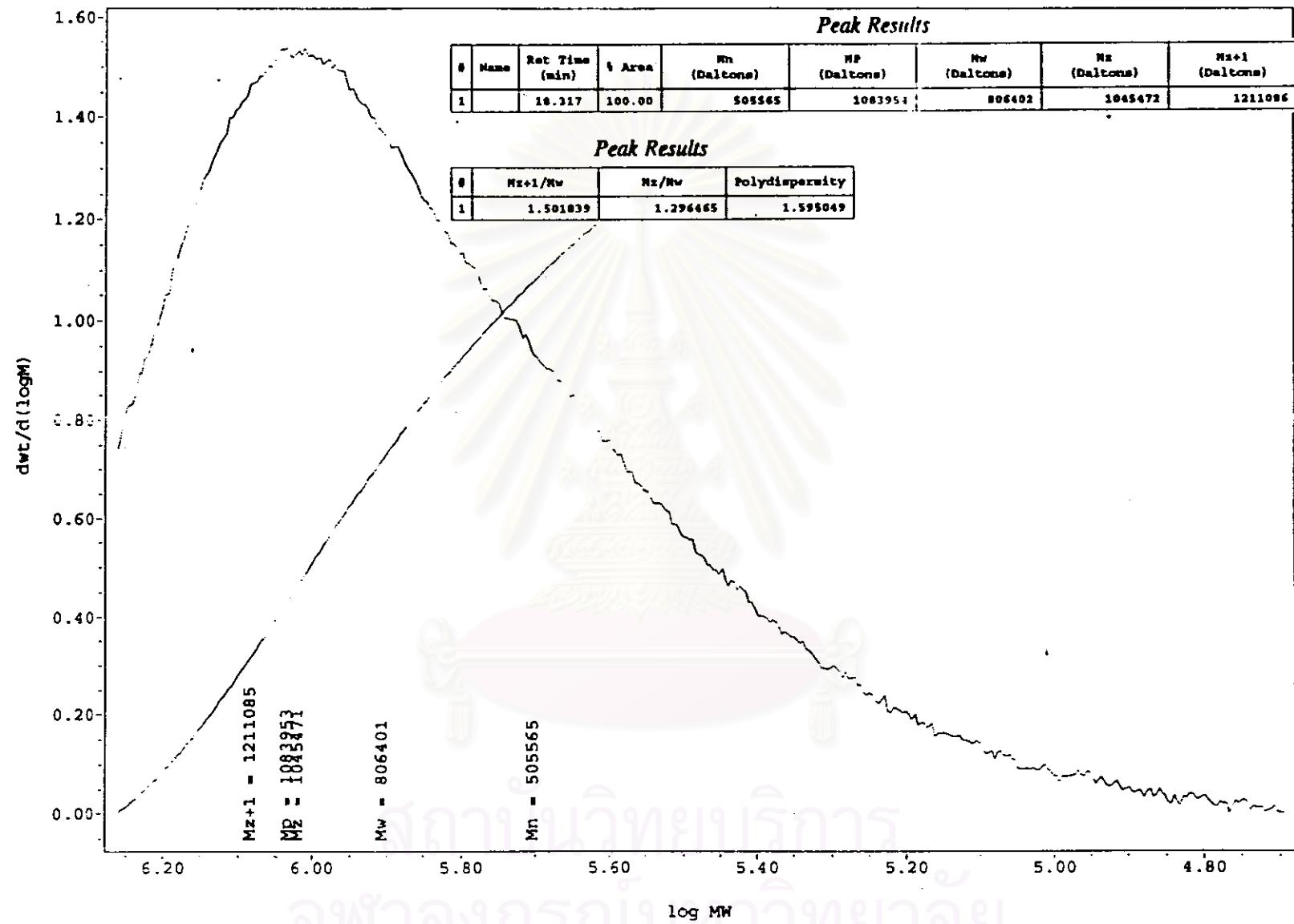


Figure B-16 GPC curve of polyethylene produced with  $SiCl_4$

## VITA

Miss Sudsiri Hemsri was born in Bangkok. She received the Diploma in Analytical Chemistry from Institute of Analytical Chemistry Training in 1993 and the Bachelor Degree of Science from Department of Chemistry, Faculty of Science, Chulalongkorn University in 1995. She continued her study for the Master Degree in Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University in 1996-1999.



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