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APPENDICES

Appendix A: Properties of materials in this experiment.

1. High-density polyethylene (RR1760)

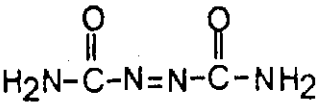
MFI 2.16 kg/190 °C	3	g/10min
Density	0.957	g/cm^3
Tensile strength at break	>18	N/mm^2
Tensile strength at yield	>30	N/mm^2
Elongation at break	>800	%
Notched impact strength	>4.5	mJ/mm^2
Ball indentation hardness	>54	N/mm^2

2. Natural Rubber (TTR5L)

3. Compatibilizer : Epolene wax

Ring and ball softening point	157 °C
Density	0.934 g/cm^2 at 25 °C
Acid Number	47
Brook field Thermosel Viscosity (cP)	
at 140 °C	solid
at 150 °C	solid
at 190 °C	400
Color, Gardner scale	11
Molecular Weight (GPC)	
Mw	9100
Mn	3900

4. Blowing agent: Azodicarbonamide

Chemical Structure	
Molecular Weight	116.1
Specific Gravity	1.65
Specific Heat	0.25 kcal/kg ^{o}C
Combustion Heat	217.2 kcal/mol
Appearance	Fine, Pale Yellow Powder
Decomposition Point	195 - 202 ^{o}C
Gas Volume Evolved	240 ml/g

Appendix B: TGA thermograms of the blowing agent activated by blowing agent activator

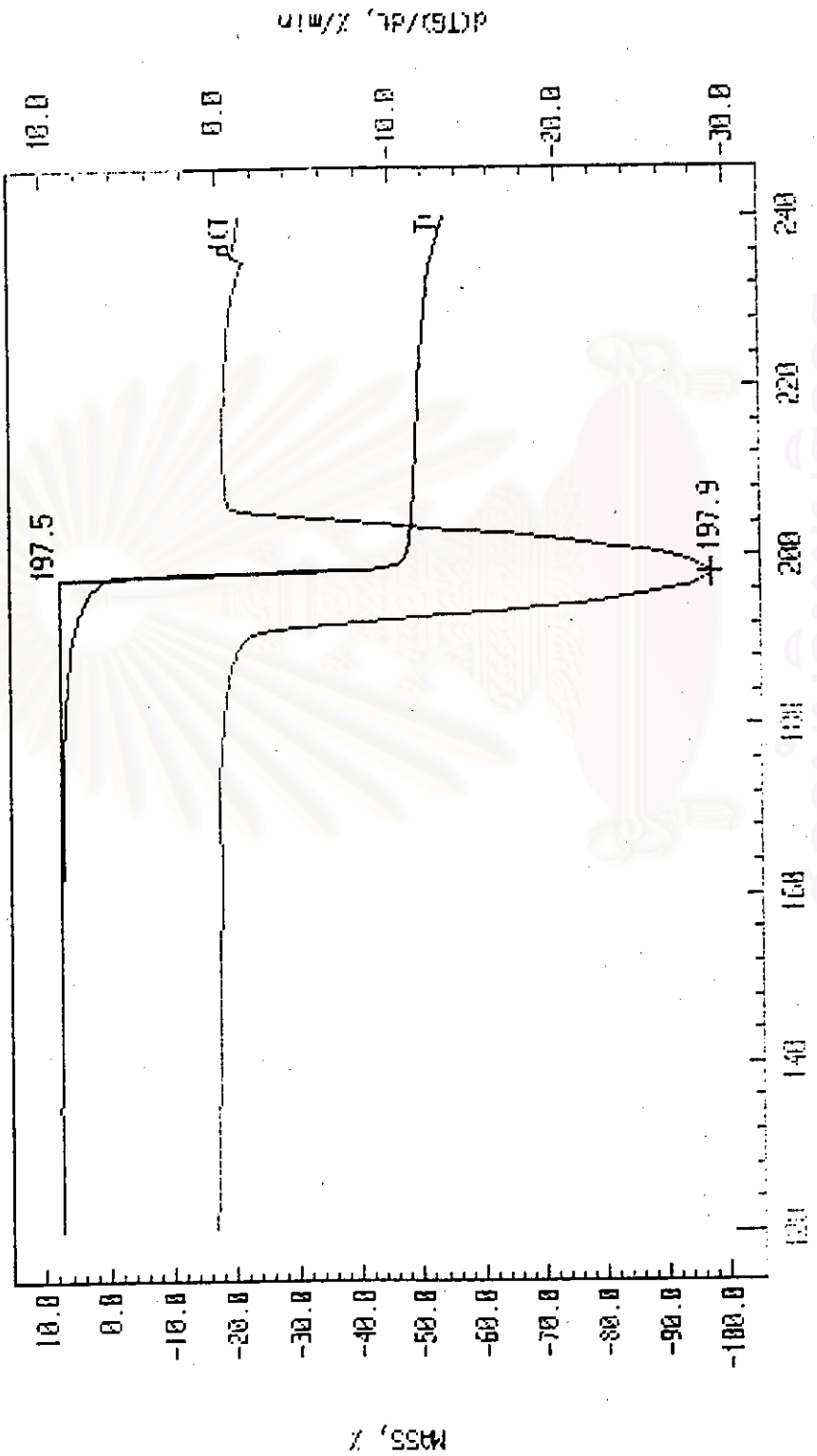


Figure B1 TGA thermogram of azodicarbonamide activated by 10% zinc oxide

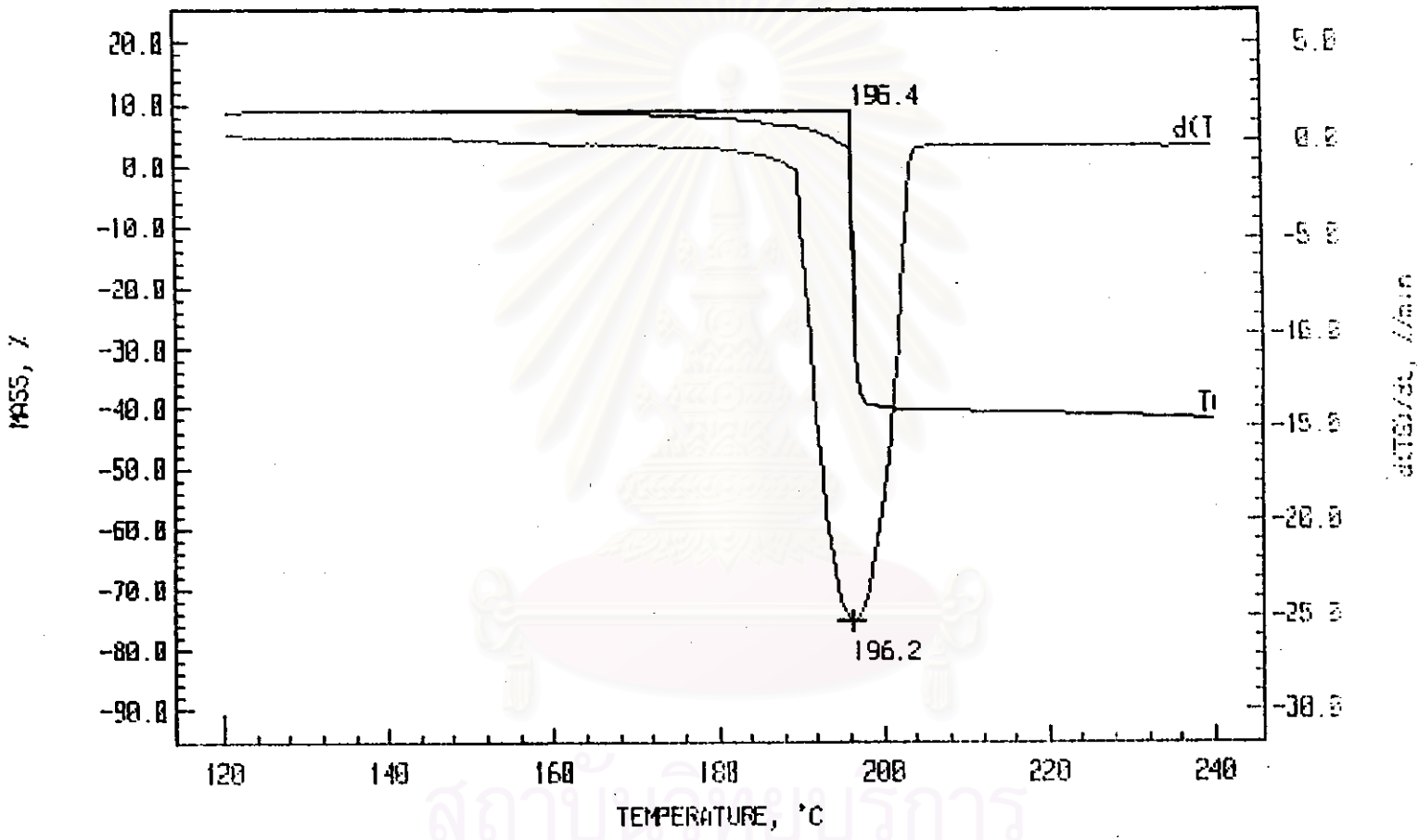


Figure B2 TGA thermogram of azodicarbonamide activated by 25% zinc oxide

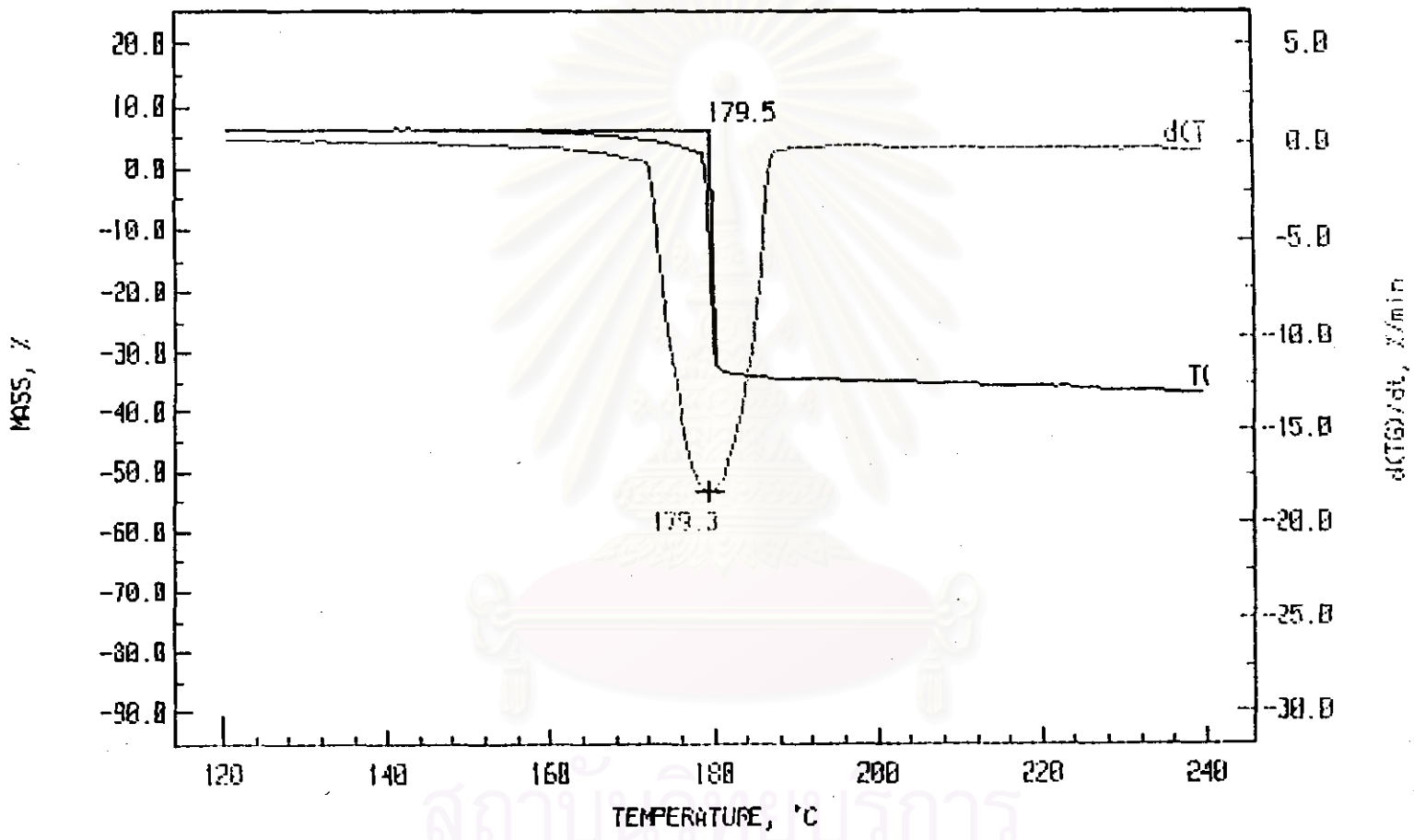


Figure B3 TGA thermogram of azodicarbonamide activated by 50% zinc oxide

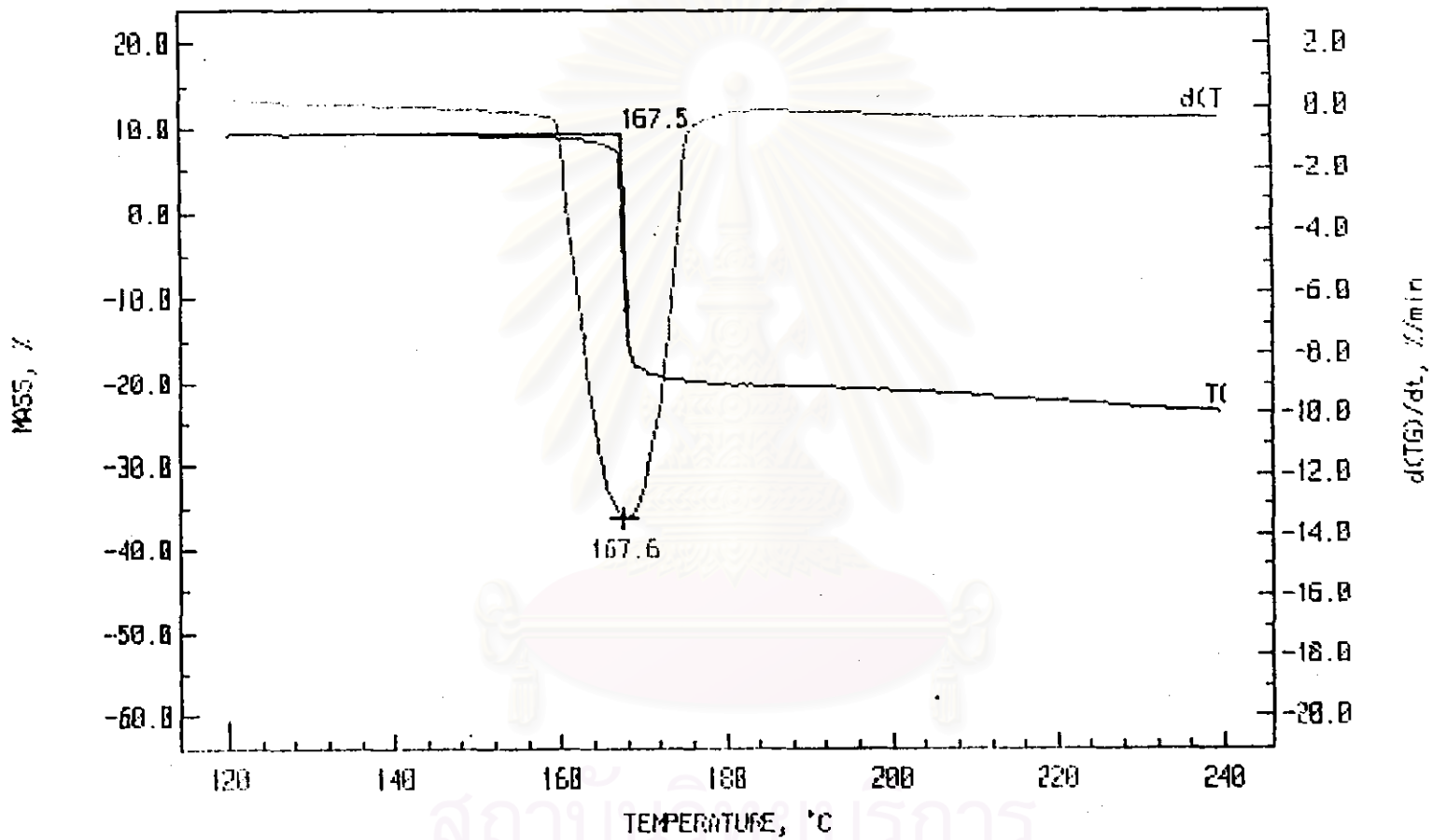


Figure B4 TGA thermogram of azodicarbonamide activated by 75% zinc oxide

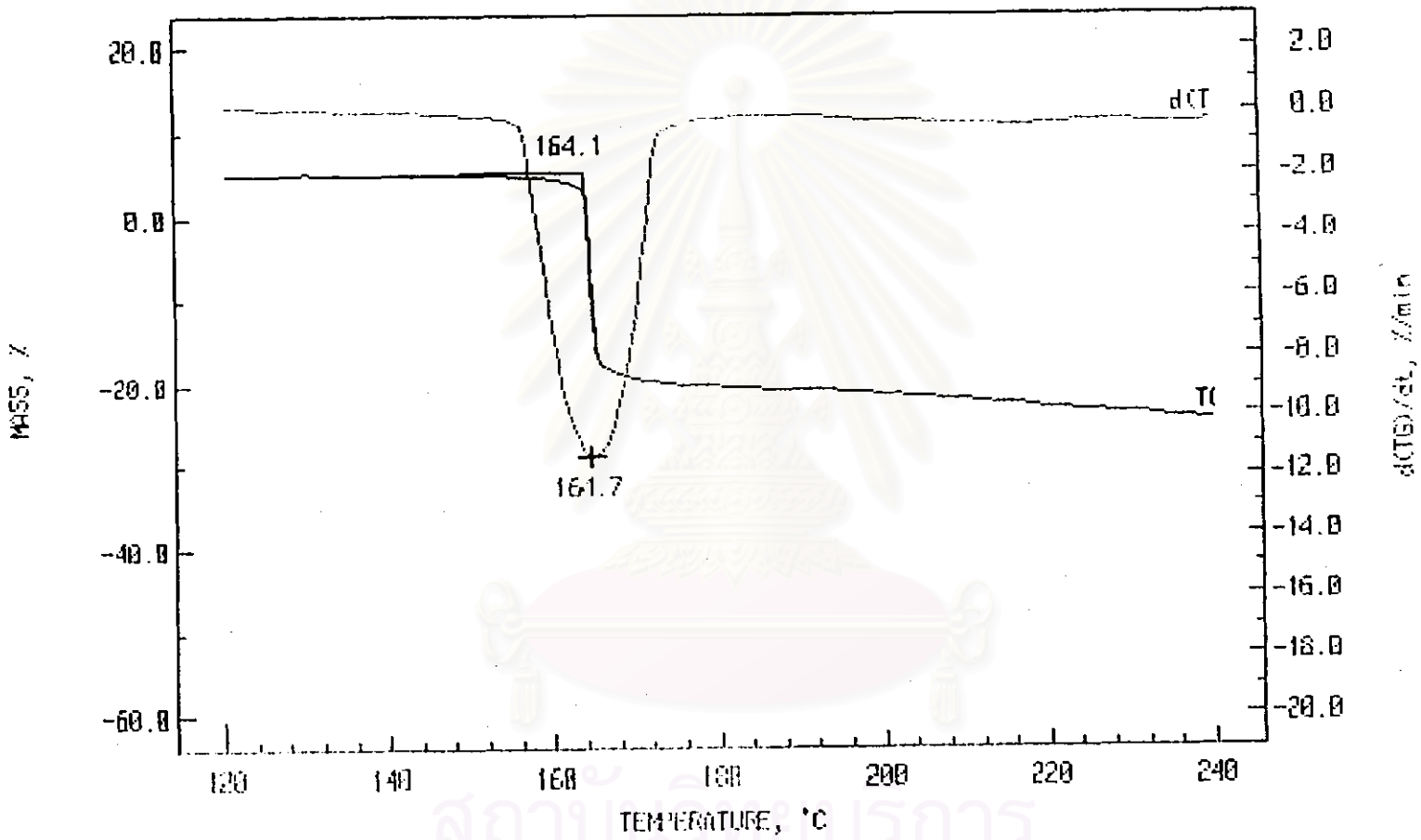


Figure B5 TGA thermogram of azodicarbonamide activated by 100% zinc oxide

VITA

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