

HIGH DENSITY POLYETHYLENE (HDPE)/CHINA CLAY BLEND

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLE	vi
LIST OF FIGURE	vii
LIST OF ABBREVIATION	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1 INTRODUCTION	
1.1 Background	1
1.2 Objectives of study	2
CHAPTER 2 LITERATURE REVIEW	
2.1 Polymer	3
2.1.1 Thermoplastic polymer	3
2.1.2 Polymer compounded	4
2.2 Filler	5
2.2.1 Inert filler	5
2.3 Lubricants	6
2.4 Coupling agent	7
2.5 Polyethylene (PE)	8
2.5.1 High Density Polyethylene (HDPE)	9
2.5.1.1 Production of HDPE	9
2.5.1.2 Structure of HDPE	10
2.5.1.3 Properties of HDPE	11
2.5.1.4 Processing of HDPE	12
2.5.1.5 Application of HDPE	13
2.6 China clay	14
2.6.1 Introduction	14
2.6.2 Chemical composition of China clay	15
2.6.3 Application of China clay	15
2.7 Stearic acid	17
2.8 Maleic Anhydride	18
CHAPTER 3 MATERIALS AND METHODOLOGY	
3.1 MATERIALS	19
3.2 METHODOLOGY	19

3.2.1	Preparation of the samples	19
3.2.2	Blending process	20
3.2.3	Crushing process	20
3.2.4	Compression moulding	22
	3.2.4.1 Hot Press	22
	3.2.4.2 Cold Press	22
3.2.5	Mechanical testing	23
	3.2.5.1 Tensile testing	23
	3.2.5.2 Izod impact testing	24
	3.2.5.3 Density test	25
3.2.6	Thermal testing	25
	3.2.6.1 Fourier Transform Infrared Spectroscopy (FTIR)	25
	3.2.6.2 Differential Scanning Spectroscopy (DSC)	26
CHAPTER 4 RESULT AND DISCUSSION		
4.1	Tensile properties	27
	4.1.1 Tensile strength	28
	4.1.2 Young's modulus	29
4.2	Izod impact test	33
	4.2.1 Impact strength	34
4.3	Density	36
4.4	Fourier Transform Infrared Spectroscopy (FTIR)	39
4.5	Differential Scanning Spectroscopy (DSC)	43
CHAPTER 5 CONCLUSION AND RECOMMENDATIONS		44
REFERENCES		46
APPENDICES		48
CURRICULUM VITAE		49

LIST OF TABLES

Table		Page
3.1	Formulation of the HDPE blending with China clay	21
4.1	Tensile properties of unfilled HDPE and HDPE/China clay blend	27
4.2	Impact strength of unfilled HDPE and HDPE/China clay blend	33
4.3	Density of unfilled HDPE and HDPE/China clay blend	36
4.4	Characteristic peaks of unfilled HDPE and HDPE/China clay blend	40

ABSTRACT

HIGH DENSITY POLYETHYLENE (HDPE)/CHINA CLAY BLENDS

The effect of China clay on the HDPE properties was studied. This studied covered the effect of maleic anhydride as the coupling agent in this blends. The specimens were fabricated at temperature 170 °C by using the compression moulding machine and cut into the bar shape according to both ASTM and ISO standard. The testing involved both mechanical and thermal testing. From the testing, it can be observed that by incorporating the China clay, the tensile strength of the HDPE was decreased. The incorporation of the coupling agent did not increase the tensile strength of the blend. However, the Young's modulus of most of the blends was increased. In the izod impact testing, impact strength of the blend that contains the 10 wt% China clay was higher than unfilled HDPE. The incorporation of China clay more than 10 wt% decreased the impact strength of the HDPE. From the FTIR testing, the appearance of the new peak represented the interaction between HDPE and China clay was observed. The formations of air bubbles during the processing were found affected the properties of the HDPE/China clay blend.