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APPENDICES

APPENDIX A

Characterization of Benzoxazine/Urethane Polymer Alloys

Appendix A-1 Glass transition temperature of BA/PU alloys.

BA/PU Systems Compositions	Glass Transition Temperature (°C)
	from DSC
100/0 BA/PU	165
90/10 BA/PU	182
80/20 BA/PU	209
70/30 BA/PU	218
60/40 BA/PU	246

Appendix A-2 Degradation temperature of BA/PU alloys.

BA/PU Systems Compositions	Degradation Temperature (°C)	
	5% weight loss	10% weight loss
100/0 BA/PU	317	342
80/20 BA/PU	326	345
70/30 BA/PU	326	348
60/40 BA/PU	326	348

Appendix A-3 The char yield of BA/PU alloys.

BA/PU Systems Compositions	Char Yield (%)
100/0 BA/PU	24.7
80/20 BA/PU	19.6
70/30 BA/PU	18.5
60/40 BA/PU	16.5

APPENDIX B

Thermal Characterization of Kevlar™ Fiber reinforced Benzoxazine/Urethane Alloys

Appendix B-1 Glass transition temperature of Kevlar™ fiber reinforced BA/PU alloys

BA/PU System Compositions	Glass Transition Temperature (°C) from DMA
100/0 BA/PU	178
90/10 BA/PU	180
80/20 BA/PU	193
70/30 BA/PU	220
60/40 BA/PU	235

Appendix B-2 Degradation temperature of Kevlar™ fiber reinforced BA/PU alloys

BA/PU Systems Compositions	Degradation Temperature (°C)	
	5% weight loss	10% weight loss
100/0 BA/PU	376	472
90/10 BA/PU	377	459
80/20 BA/PU	351	405
60/40 BA/PU	330	374

Appendix B-3 The char yield of KevlarTM fiber reinforced BA/PU alloys

BA/PU Systems Compositions	Char Yield (%)
100/0 BA/PU	44.5
90/10 BA/PU	41.6
80/20 BA/PU	40.5
60/40 BA/PU	35.6

APPENDIX C

Mechanical Characterization of Kevlar™ Fiber reinforced Benzoxazine/Urethane Alloys

Appendix C-1 Flexural properties of Kevlar™ fiber reinforced BA/PU alloys

BA/PU Systems Compositions	Flexural Modulus (GPa)	Flexural Strength (MPa)
100/0 BA/PU	18.2±0.4	162.7±11
90/10 BA/PU	16.3±0.6	134.7±10
80/20 BA/PU	16.1±2.7	109.2±22
70/30 BA/PU	12.5±2.1	79.7±14
60/40 BA/PU	7.7±1.6	52.3±13

Appendix C-2 The storage modulus of BA/PU alloys.

BA/PU Systems Compositions	Storage Modulus (GPa)
100/0 BA/PU	16.4
90/10 BA/PU	15.8
80/20 BA/PU	10.2
70/30 BA/PU	6.6
60/40 BA/PU	2.8

VITA

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