

CONTENTS

Part 1. Polyolefins	3
1. Isobutylene	5
2. Ethylene	5
3. Propylene	11
Part 2. Polyethylene fibres	
Introduction	37
Fibres from low – density polymer	37
Fibres from high – density polymer	38
Production	
1. Low – density polyethylene fibres	39
2. High – density polyethylene fibres	39
Structure and properties	39
Polyethylene fibres in Use	48
General characteristics	48
Notes on specific end Uses	51
Part 3. Polypropylene fibres	
Introduction	63
Commercial development	63
Market prospects	70
Production	
Spinning and processing conditions	75
Crystalline structure	75
Stabilization	77
Structure and properties	
Molecular weight	81
Degree of crystallinity	82
Fine structure and appearance	83
Tensile strength	83
Elongation	83
Elastic properties	84
Specific gravity	85
Effect of moisture	86
Thermal properties	87
Effect sunlight	89
Chemical properties	89

Effect of organic solvents	90
Resistance to insects	90
Resistance to micro – organisms	90
Electrical properties	90
Coefficient of friction	90
Other properties	91
Identification and determination	92
Polypropylene fibres in Use	96
1. Fibre to fabric	96
Processing staple fibre on the cotton system	96
Processing staple fibre on the woollen system	106
Processing staple fibre on the worsted system	109
Processing staple fibre on hard – fibre systems	118
Conversion of tow or staple fibre into tops	121
Processing of multifilament yarns	129
Weaving	131
Knitting	135
Sewing	137
Dyeing	138
2. End Uses	175
General characteristics of polypropylene fibre goods	175
Notes on specific end uses	186
Polypropylene split film fibres	272
Part 4. Polyethylene fibre manufacturers and their products (Manufacturers' names Listed alphabetically)	275
Part 5. Polypropylene fibre manufacturers and their products (Manufacturers' names Listed alphabetically)	313
Polyolefin fibre manufacturers names and addresses	589
Index	594