

2.9 30909 POLYMER PROCESSING

UNIT-1

Compounding:- Principles of mixing – types of mixing , dispersive & distributive mixing – batch and continuous mixing – mastication and mechanism of mixing – two roll mixing –ban bury mixing master batching- Mixing variables – material feeding and discharge, rotor speed, fill factor, ram pressure, batch temperature, mixing sequences –Upside down mixing

UNIT-2

Current methods of polymer processing techniques-compression mould–importance of flash positive, semi-positive type types compression mould-injection moulding-different types RIM, RRIM, examples of compression moulded and injection moulded products-Comparison of injection moulding with compression moulding, advantages, injection moulding cycle. Transfer moulding process-comparison of compression and transfer moulding –advantages-examples of products-trouble shooting.

UNIT-3

Vulcanization techniques other than molding-batch vulcanization methods- autoclave- hot air oven-hot water-etc. Continuous vulcanization- different methods-examples of product produced by each method.

UNIT-4

Extrusion technology-pipe extrusion ,sheet forming process, split film extrusion, blow film extrusion, extrusion blow moulding, different methods,parison programming, wire coating. Principles of calendaring-production of supported and unsupported sheeting, textile coating-skim coating or topping, frictioning, spreading-advantages and disadvantages-comparison of calendaring and spreading, rofile calendaring, advantages –major applications.

UNIT-5

Casting: principle of casting-material for casting-mould pattern –ejection techniques Rotational moulding –thermos forming- different methods –pressure forming, vacuum Forming etc:-Welding of plastics –different methods

Reference Books:

1. Rubber processing and production organization – Philip.K.Frankly
2. Rubber Technology and Manufacturing – C.M. Blow
3. Mould design – Pye
4. Extrusion – H.G. Fisher
5. Injection moulding – Irvin Ruhin
6. Blow moulding – David.A.Jenners
7. Hand book of Engineering Plastic – Society for plastics and Rubber