

## 2.17 30917 LATEX TECHNOLOGY

### UNIT-1

Introduction to latex Technology Survey of latex products manufacturing industry in India, consumption of Natural & synthetic lattices for the products of latex Major latex products and their classification – consumption of latex for each of the above classes Composition and properties of NR latex General chemical composition of latex – different phases, their composition and properties Colloidal nature of latex – general colloidal properties of latex. Colloidal stability and stabilization of latex. Destabilization of latex. Methods of stabilization of latex for product manufacture Compounding of latex Definition and objective of latex compounding. General principles of latex compounding. Compare of latex compounding with dry rubber compounding ingredients Classification of compounding ingredients for latex – description and examples, vulcanizing agents, accelerators, activators, fillers, stabilizers, wetting agents, thickeners, gelling agents, emulsifiers, heat sensitizing agents and dispersing agents. Preparation of compounding ingredients – solution, emulsion and dispersion – a comparative study. Compounding of latex, machinery/ Recent - developments

### UNIT-2

Dipped goods Introduction to various dipped goods – dipping processes. Methods of dipping – straight dipping coagulant dipping, dipping with porous mould dipping with heated formers – merits and demerits of each. Relation between thickness of deposits and number of dips in each case. After treatments of latex deposits – drying, surface treatment, bleaching, chlorination, vulcanization and stripping. Compounding of latex for manufacture of various types of dipped goods and some typical dipping compounds. Manufacture of important dipped goods like gloves, balloons, nipples, rubber bands, and condoms etc. some common defects and their remedies. Examination gloves – methods of manufacture, machinery, powder free dusting. Recent developments

### UNIT-3

Production by casting General principle, processes of casting – production of hollow and solid articles by casting – preparation of moulds for latex casting. Products by casting Technic Latex Foams Foam manufacturing industry in India – introduction to various latex foam products. Manufacture of latex foam – Dunlop and Tallalay process, different steps – deammoniation, compounding, mechanical frothing, gelling, vulcanization etc. Gelling – various gelling system – a comparative study. Some typical latex compounds for foam production. Common defects and causes Fibre foam (Latex treated coir) and carpet backing Characterization of fibre foam – constituents, production of coir foam – various steps. Advantages of carpet backing. Methods of applying latex to carpet backs, carpet backing formulation

### UNIT-4

Latex Extrusion General Principles of latex extrusion – important latex products made by extrusion. Manufacture of latex thread – details of processes and equipment's, quality control tests for latex thread comparison of latex thread with dry rubber thread. Applications of latex thread,

latex rubber tubing details of processes and equipment's, application of rubber tubing. Common defects and causes Latex Adhesives Introduction – comparison with solvent based adhesives compounding of latex for the preparation of adhesives, types of adhesives. Paper and leather adhesives – method of preparation and their characteristics. Adhesives for metals, ceramics and glass. Rubber to textile bonding adhesives – nature of adhesives and typical formulation of RFL adhesives for treatment of tyre cord – composition and properties Latex Impregnation & Spreading General principles, differences, fabric proofing coating, advantages of spreading, machinery for spreading, compound for sheet, catheters

#### **UNIT-5**

Miscellaneous latex products Latex cements – methods and application of latex in roads paper treatment with latex method of application and their advantages Synthetic lattices Characteristics of synthetic lattices. Particle shape, size and distribution, specific surface area, soap content, wet gel strength, water resistance, mechanical stability, chemical stability. Agglomeration and concentration of synthetic lattices – various methods. Individual synthetic lattices – production and compounding principles and application of SBR, Neoprene, Acrylonitrile butadiene lattices, acrylic and Thiokol lattices and NBR.

#### **Reference Books;**

1. High Polymer lattices Vol. I, II & III – D.C. Blackley
2. Latex in Industry – R.J. Noble
3. Latex manual – ICI Hand book
4. Rubbery material – J. Brydson

