

2.15 31515 PLASTICS TESTING

UNIT-1 INTRODUCTION

Basic concept, Purposes of testing, specification and standards, purpose of specifications, test conditioning, precautions required in plastic testing, quality control, list of applicable standards.

UNIT-2 SPECIMEN PREPARATION TECHNIQUE

Introduction, specimen preparation from thermoplastic-
Specimen preparation from rigid & soft plastic sheet, specimen preparation from films, specimen preparation from thermo-set materials.

UNIT-3 IDENTIFICATION ANALYSIS OF PLASTICS MATERIALS

Plastic Identification chart, Identification of plastics materials-

- (i) thermoplastic
- (ii) thermosetting plastics. Miscellaneous observations - Visual, touch, copper wire test, Burning test, Solubility Solvents and non-solvents for plastics.

UNIT-4 ANALYTICAL TESTS:

Specific gravity, Density-by-Density Gradient Technique, Bulk Density, Water absorption.

UNIT-5 FLOW PROPERTIES

Introduction to Flow Properties, Melt Flow Index, Spiral Flow, Cup Flow.

UNIT-6 MECHANICAL PROPERTIES:

Introduction to stress-strain curves, Tensile properties, Flexural properties, Impact properties, Compressive properties, Burst Strength, Shear Strength, Hardness, Tear Strength, Abrasion, Creep and Stress relaxation

Reference Books:

1. Hand Book of Plastic Testing Technology- Vishu Shah
2. Identification and testing of plastics- A.S Athalye
3. Simple methods for identification of plastics- Dietrich Braun (Hanser publications)
4. Testing and evaluation of Plastics- A.B. Mathur & I.S Bhardwaj