AMPL14 COMPOUNDING & PROCESSING OF POLYMERS

UNIT-1 BASIC CONCEPT OF COMPOUNDING AND PROCESSING

1.1 Concept of Master batches

UNIT-2 CLASSIFICATION AND TYPE OF ADDITIVE FOR PLASTICS

2.1 Antioxidants,
2.2 Light stabilizers,
2.3 UV stabilizers,
2.4 Lubricants and relative auxiliaries,
2.5 Processing aids, Impact modifiers,
2.6 Flame retardance, and antistatic agents.
2.7 PVC stabilizers and Plasticizers

UNIT-3 COLOURATION OF PLASTICS:

3.1 Chemistry , synthesis, properties and applications of Inorganic Pigments such as Titanium dioxide,
3.2 Zinc oxide, Lithophone, Carbon blacks, Metal oxide pigments,
3.3 Chromium and Cadmium pigments, Ultra marine blue etc.

UNIT-4 COMMONLY USED ORGANIC PIGMENTS SUCH AS ANTRAQUINONE

4.1 Benzimidazolone dioxazines, Diazo lakes, lake reds, Lithol rubones,
4.2 Monoazo lakes, Napthol AS lakes, Napthol AS, Perylenes, Phthalocyanines,
4.3 Quinacridones, Dyes for transparent plastics.
4.4 Dispersion of Pigments as well as agglomeration aspect should also be covered.
4.5 In addition shrinkage and warpage will also be discussed.

UNIT-5 PROCESSING TECHNIQUES

5.1 Basic of varies processing techniques such as
5.2 a) One-dimensional process is like Coating and Adhesives.
5.3 b) Extruders: single screw and twin screw extruders, Film blowing, coextrusion of multilayred films,
5.4 Fiber spinning, Pipe extrusion, Extrusion of profiles, coextrusion of pipes, Extrusion of cable material, extrusion of sheet, Calendaring, Thermoforming.
5.5 c) Molding: Injection molding Blow molding, Compression molding, Injection stretch blow molding, Resin transfer molding,
5.6 Gas and water assisted injection molding and other three dimensional molding.

References Books:

1. High performance pigments Huge M. Smith
2. Pigment Handbook Part 1, 2,3 Patton
3. Application properties of Pigments A. Karnik