

LECTURE 3

3.0 METAL CANS

Consists of steel base sheet with a tin coating. The tin is applied by hot dip or electrolytically. Electrolytic application can be done differentially so that the two sides of the tin plate have different thickness of tin coating.

3.1 LAQUERS, Enamels

Besides the tin coating other organic coatings are also applied. These coatings must be non-toxic and free from odors and tastes. They must not come loose during processing or storage

These coatings consist of

INTERIOR	EXTERIOR
Acrylics	Acrylics
Alkyds	Alkyds
Butadienes, epoxyamine	Oleoresins
Epoxyester, epoxy-phenolics	Phenolics
Oleoresins, Phenolics	Vinyls
Vinyls	

Since 1959 – Aluminum is being used for beers, concentrated frozen fruit huice, frozen baked goods, powdered mil, condensed milk. An interior coating is generally necessary for Aluminum.

Advantages of metal cans	Disadvantages
1. Strong	1. Heavy
2. High speed manufacturing, filling and closing	2. cannot be re-closed
	3. Not disposable

3.2 COMPOSITE CONTAINERS

This is made from 2 or more constituent materials

Usually = Paper Board Body + Metal or plastic Ends

Two types:

(a) Spiral wound containers – made in cylindrical shapes where two or more plies of board are glued together around a mandrel

(b) Convolute – wound composites – produced by straight winding.

3.3 AEROSOL CONTAINERS

Uses Beverage concentrates
Cocktail mixes
Cake icings
Pancake mixes
Syrups
Salad Dressings and seasonings

3.4 RIGID PLASTIC PACKAGES

Advantages

- Low cost
- Ease of Fabrication

Disadvantages

- Lack of product compatibility
- Low barrier properties
- Plastic deterioration
- Low heat resistance
- Fragility at low temperature.

3.5 MAIN TYPES OF PLASTIC CONTAINERS

Thermoformed	Injection-Molded	Blow-Molded
Heat treated plastic is	Used in high volume	Used where containers have

<p>formed around a mold.</p> <p>They may be pressure or vacuum formed.</p> <p>Plastics used are polyvinyl chloride polystyrene, polypropylene ABS (Acrylonitrile butadiene styrene) Cellulose acetate.</p> <p>Trays are made with – this method</p>	<p>applications for jars bottles and tubs. Plastics used are: polypropylene, polystyrene.</p> <p>Has outstanding clarity</p>	<p>small neck diameter compared with rest of body.</p> <p>Plastic used are: Polyvinyl chloride polypropylene, polycarbonate, Cellulose Acetate Polystyrene polyethylene, polyacetate.</p>
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3.6 SOLID AND CORRUGATED FIBERBOARD CONTAINERS

Used to fabricate shipping cartons and cases

Used in wholesale and industrial shipping.

3.7 WODDEN BOXES AND CRATES

Used when timber is plentiful and inexpensive for shipping purpose.

3.8 CYLINDRICAL SHIPPING CONTAINER

Have high stacking strength

Can be rolled in Handling

They are made from fiberboard

Glass, metal, plastic or wood

Glass containers have been used as liners for other shells from: steel aluminium, fiberboard or wood

BARRELS Metal barrels made of steel or aluminium

DRUM

PAIL

KEG Small barrel

CASK Large, light wooden barrel

3.9 CONTAINERIZATION

Purpose is safe transport of goods from point of manufacture to sales point economically.

Concept is to use as freight, container which is delivered directly to factory from loading point. At point of use container is directly off-loaded.