Coatings and Adhesives

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CE 435
Overview

- Background
- Coatings
- Types of Coatings with Examples
- Types of Adhesives with Examples
Coatings

- Thin layers
- Permanently Bonded
- Temporarily Bonded
Types of Coatings

- Four different subheadings
- Volatile Solvent Contained?
- Chemical Reaction Present?
Non-Diluent, Non Reactive

- No volatile solvent present
- No chemical reaction
Examples

- Natural Pitch
- Milk Cartons
- Fluidized Bed Coating
- Electrostatic Spray Coating
Non-Diluent, Reactive

- Non-volatile solvent present
- Chemical reaction
- Fluidized Bed
- Examples
  - Egyptian Mummy
  - Photo-curable Printing Ink
Diluent, Non-Reactive

- Volatile solvent present
- No chemical Reaction
- Adjustable Volatility
- Glass Transition Temperature, $T_g$
Examples

- Touch Up Paint
- Latex House Paints
Diluent, Reactive

- Volatile solvent
- Chemical reaction
- **Example**
  - Linseed Oil
Adhesives

- Mechanical Adhesion
- Specific Adhesion
- Three vital properties
- Analogous to Coatings
Non-Diluent, Non-Reactive

- Water
- Plasticized Rubbery Polymers
Non–Diluent, Reactive

☐ Cyanoacrylate Adhesives
Diluent, Non–Reactive

☐ Rubber Cement
☐ Model Airplane Glue
☐ White Glue
Diluent, Reactive

- Plywood
- Phenol-formaldehyde resin
Questions