

Chapter 23. Surface Finishes

1. Oil paints - popular and widely used finishes that consist of a suspension of pigment in a drying oil, an ester of glycerine with an unsaturated fatty acid such as linseed oil.
 - once cured, no longer soluble (cobalt naphthenate) are used to promote the crosslinking)
 2. Oil Vanish - vanishes are coatings that consist of a polymer, either natural or synthetic, dissolved in a drying oil, with an inert solvent to control viscosity and a catalyst to promote the crosslinking reaction. when cured, a clear, tough, solvent-resistant film is produced.
 3. Enamel - an enamel is a pigmented oil vanish: provides a tougher, glossier film.
 4. Latex Paints - because of the quick drying, low odor, and water cleanup properties, replacing oil paints and enamels for home use.
 - in order for the particles to coalesce to form a film when the water evaporates, the polymer must be deformable under the action of surface-tension forces: thus latex paint must be near or above their T_g at use temperature.
 - Paint is plasticized by the solvent so that its T_g is below application temp.
 - (e.g.) styrene-butadiene copolymers or polyvinyl acetate. plus acrylic
(acrylates, ROOCH=CH₂, or methacrylates, ROOCCH₃=CH₂)
 - The main rheological property desired is thixotropy :
which gives a high viscosity to prevent the settling of pigments and sagging and dripping of the applied film.
- Solventless coatings (OR High solid coatings) :
 - evaporated solvents are now recognized as a significant source of air pollution : and also economically unattractive.

- 100%-solid coatings is to carry out the polymerization reaction right on the surface. Reactive liquid monomer or oligomer is deposited on the surface and polymerized there.

(e.g.) epoxides, polyurethanes, unsaturated materials.