

# Paints

→ Definition : Paint is a viscous suspension of finely divided solid pigment in a fluid medium X

→ Paint is a general term for liquid that is used to add colour to the surface of an object by covering it with a pigmented (coloured) coating.

→ Characteristics :

- High hiding (covering) power.
- Fairly cheap & economical.
- Should not crack on drying.
- Long lasting.
- Easily applied on the metal surface.
- Corrosion resistant.
- Stable colour on the metal surface.

→ Constituents :

1. Pigments :
  - Solid
  - Colour producing substance.
2. Vehicle (Medium):
  - Liquid portion of the paint.
3. Additives : Modify the properties of <sup>liquid</sup> paint.
4. Thinners : To reduce the viscosity of paints thinners are used.

## → Methods of Application :

1. Brushing : A paint on a surface may be painted using a brush. Brushes may be made according to the type of paint applied.
2. Spraying : Paint is sprayed on the surface by using a spray gun. It <sup>can</sup> be applied quickly & easily. It is a modern method.
3. Dipping : It may be applied on uniform shape articles like enamelled wire.
4. Roller Coating : It is applied on flat sheets articles like containers.
5. Tumbling : It is applicable for small articles made of wood.

barrels  
↓  
Revolution

- ## → Applications :
- Protection
  - Decoration

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## ★ Special Paints or Types of Paints :

→ **Heat Resistant Paint** : Heat resistant paint is a special paint that is designed to withstand high temperatures. These paints can resist heat, flames, grease, rust and smoke which make them ideal for specific applications.

### Applications :

- Boilers
- Fans
- Steam Pipes
- Grills

## Cellulose Paint

### Preparation :-

→ Methyl or ethyl cellulose is dissolved in petrol and the plasticizer is mixed into it. Thus the cellulose paint is prepared.

→ **Properties** :

- Flexibility
- Hardness
- Oiliness
- Absorb low heat & temperature.
- Costly.

→ **Applications** :

- Motor cars bodies
- Aeroplane bodies.
- Space technology.

→ This paint is also called spray paint.

## Chemical Resistant Paints

- These paints are prepared from resins.
- Properties :
  - Excellent chemical resistant property.
  - They offer good resistance to water.
  - Not affected by heavy rains.
  - Quickly dry.
  - Not affected by weather & sunlight.
  - Easy to apply.

## Emulsion Paint

- Emulsion paints are those paints in which water is used in place of organic solvents as thinner.
- Advantages :
  - Easy to apply with brush or roller
  - Quick drying
  - More durable
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## Metal Paints

- Applications :-
- Automobiles
  - Motorcycles
  - Metal office furniture

- Al is most commonly used for metallic paint. Stainless steel, Pb & Zn also used.
- Spraying is the best method of applying metallic paints.

## Water Paint or Distempers

- These are water paints made with base as white chalk and thinner as water.
- They are <sup>powder</sup> powder and cheaper than paints.
- Characteristics :
  - The coatings are thick and more brittle compared to paints.
  - Easy to apply but less durable.
  - Most suitable for plastered surfaces.

## Cement Paint

- This paint consists of white cement, pigment, accelerator and other additives.
- Properties :
  - It is <sup>available</sup> in dry powder form
  - Excellent decorative appearance.
  - It is water-proof & durable.
- Advantages :
  - Requires less skill & time
  - Easy process

## Anti-fouling Paints

- Also called bottom paints.
- Main component :  $HgO$  (Mercuric oxide),  $Cu_2O$ ...



# Varnishes

→ Varnish is a clear transparent hard protective finish or film.

→ Varnish is traditionally a combination of a drying oil, a resin, and a thinner.

→ Varnish is primarily used in wood finishing applications.

→ Types :

- i) Oil Varnish
- ii) Spirit Varnish

→ Characteristics :

- It should be soft & ten
- It should dry quickly
- It should produce a protective film.
- It should produce shining film on drying.
- It's colour doesn't change due to atmospheric weather.
- It shan't crack after drying.  
should not

→ Uses :

- For protection of articles against corrosion.
- Used as a brighting coat to painted surface.
- Used for improving the appearance of wood surfaces.