



Centenary Celebrated Sharanabashaveshwar Vidya Vardhaka Sangha's

Sharanabasaveshwar

COLLEGE OF SCIENCE KALABURAGI 585103

A REPORT ON

ONE – DAY WEBINAR BY STUDENT ON

FORMULATION OF PAINTS

CONDUCTED BY

DEPARTMENT OF CHEMISTRY

DATE : 14/04/2020

TIME : 12pm

Through : ZOOM application

Name : Aishwarya Dattankere

Reg. no : 91866291 Roll .no : 255

Mobile no : 8618844530

E-mail : aishudattankere20@gmail.com

Class : B.Sc VI Sem (CBZ)

Guided by :

Dr. Swarooparani

Head of the Department :

Dr. Ranoji Shikkarigol

Head

Department of Chemistry
Sharnbasaveshwar College of Science
KALABURAGI



Join our Cloud HD Video Meeting

Zoom is the leader in moder...
us04web.zoom.us

Click <https://us04web.zoom.us/j/3910021702?pwd=d1FGTIN5VldrM0tkZnQwaWN0b2JCQT09> to start or join a scheduled Zoom meeting. 3:54 pm

12:04 PM

20.9KB/s 4G 12:13 PM

13.1KB/s 4G

Close Participants (14)

Close Participants (19)

Search

- S Swarupa Rani (me)
- AD Aishwarya Dattanke... (host)
- AD Anusha Deshpande
- B Bhagya
- r ranoji Shikkargol
- AK Aishwarya K
- BS Basavaraj S.M
- G Geeta Yargal
- Laxmi Savali

- GM Gurukiran Malipatil
- Laxmi Savali
- MP Mangalambika Patil
- Mr. Kavali
- r ranoji Shikkargol
- r Reshma Malibiradar
- Santosh Bhimshetty
- Sharanabasappa M. Pol...
- Soubhagya Sajjan
- NH Nagaveni Hiremath

Chats

Invite

Chats

Invite

12:15 PM



Swarupa Rani



ranoji Shikkargol



Aishwarya Dattankere



Soubhagya Sajjan

• • • • •

12:03 PM



Aishwarya K



Laxmi Savali



Mangalambika Patil



Reshma Malibiradar

• • • • •

12:09 PM



Swarupa Rani



ranoji Shikkargol



Aishwarya Dattankere



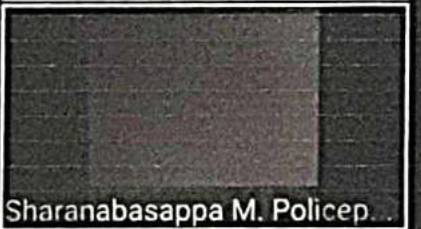
Soubhagya Sajjan

• • • • •

12:16 PM



Nagaveni Hiremath



Sharanabasappa M. Policep...

• • • • •

PAINTS

Definition :- Paint is a type of coating which is used for the desired appearance and colouring purpose along with serving other properties like protection, conductivity etc.

constituents of paints

Following are the various constituents of paints

1. Pigments
2. Extenders
3. Film forming material
4. Dries
5. Thinners
6. Lacquers
7. Antiskinning agent
8. Plasticizers
9. Resins

1. Pigments

Pigments are the various organic or inorganic insoluble substance which are used in surface coating.

The most important property pigments are good covering power, good mixing ability, chemical inertness, non-toxic, high strength and reasonable cost. Pigment protect the film by reflecting Ultraviolet light. Following are the various pigments used for making paints.

1. White lead $\Rightarrow$ titanium dioxide, zinc oxide, lithopone
2. Red pigment $\Rightarrow$ Red lead, iron oxide and cadmium red.
3. Blue pigment $\Rightarrow$ Ultra marine, cobalt blue, iron blue etc.
4. Green pigment $\Rightarrow$ chromium oxide, chromogreen.
5. Yellow pigment $\Rightarrow$ litharge, lead and zinc chromate
6. Black pigment $\Rightarrow$ Carbon black, lamp black and furnace black.
7. Metallic pigment $\Rightarrow$ copper powder, zinc dust, aluminium powder.

1. Pigment is a solid substance dispersed throughout the coating to impart it a colour, opacity (hide the substrate surface)
2. Pigment may protect the substrate from UV light
3. Pigment change the paint appearance (gloss level) and properties: increase hardness and decrease the ductility. Pigments may be natural, synthetic, inorganic or organic
4. Filler and extenders are also referred to pigments. Filler and extenders are non expensive commonly natural. Inorganic materials are added to paint in order to increase its volume, to increase paint film thickness, to impart toughness or abrasion resistance to the coating.



2. Binder

1. Binders are polymers forming a continuous film on the substrate surface.
2. Good adhesion of the coating to the substrate.
3. It holds the pigment distributed throughout the coating.

Eg: $\rightarrow$ Glue, Nitrocellulose etc.

3. Extender/filler

1. Extender or fillers are non expensive commonly inorganic material.
2. Extenders are added to the paint in order to decrease the cost of paint, and increase the volume.
3. The extenders improve the consistency leveling and settling of paint.

Eg: $\rightarrow$ Gypsum, China clay, glass flakes, SiO_2 [resistance]

4. They are added to modify the flow and mechanical properties of the paint as well as permeability.

5. Quartz sand (SiO_2). Finely ground quartz is filler increasing the abrasion resistance of the paints.
6. Extenders are the paint additives that are insoluble in binder and solvent of the formula and have little or no opacity or colour effect on the film.

4. Solvent

1. Solvent are substance that are liquid during application and will dissolve other substance, which are can be recovered unchanged on removal of the solvent.
2. The thinner is also called to the paints in order to dissolve fill forming material and to thin the concentration of the paint after adding the thinner the paint may become very easy on the surface.
3. Solvent (water or organic solvent) is medium where the binder, pigment and additives are dispersed in molecular form.

4. Solvents (thinners) are also used for modification of the paint viscosity required for the application methods brush, roller, dip and spray.

Eg :- Water, turpentine, xylene, Toluene.

5. Additives

1. Additives are chemicals added to paint usually in small quantities, to achieve special effect.
2. Driers :- These accelerate the paint drying/hardening by catalyzing the oxidation of the binder.
3. Plasticisers :- Plasticisers increase the paint flexibility.
4. Fungicides, Biocides and Insecticides prevent growth and attack of fungi, bacteria and insects.
5. Flow control agents improve flow properties.

Paint



Pigment (and extenders)

Titanium dioxide
Zinc oxide
Red oxide of iron
Yellow oxide of iron
Agent
Chrome yellows
Phthalocyanine blue
Hansa reds
Hansa yellows
Carbon black
(Hiding and Colour)

Binders

Glue
Casein
Oils
Alkyds
Vinyl acetate
Emulsion
All acrylic emulsion
Styrene butadiene
Latexes
Alkyd/Amino
Phenolics
Epoxies
Chlorinated rubber
Nitrocellulose
Vinyls

Solvent

Water
Min. Turpentine
Gen. Turpentine
Xylene
Toluene
Acetone
Collosolve
Butanol
Butyl acetate
(Ease of Application)

Additives

Wetting agent
Dispersing agent
Driers
Anti-settling agent
Thixotropic agents
Anti-foam
Defoamer
Rust-inhibitor
pH stabilizer
Bactericides
Fungicides
Algaecides
Freezethaw
Wetting agent

Process of formulation of paint

During the formulation of paints, the pigment powder is broken down into individual particles which are coated and dispersed on the binder known as wetting out. Then the solvent is added to the required consistency, and all the ingredients are mixed in large stirred additives.

Percentage composition of paint formulation

1. White gloss paint

- (i) Solvent : 40%
- (ii) Binder : 39%
- (iii) Pigment : 25%
- (iv) Additives : 5%

2. White matt emulsion paint

- (i) Solvent : 44%
- (ii) Pigment : 25%
- (iii) Binder : 14%
- (iv) Extender : 6%
- (v) Additives : 5%

Webinar Report

This webinar was held on the topic of on formulation of paint and constituent of paint, percentage composition of formulation of paint, and variety of pigments and their example and explanation about pigments, extenders, binder, solvent and also additives.

Paints are the stable mechanical mixture of one or more pigments. Paints are used for the desired appearance and colouring purpose along with serving other properties like protection from corrosion, conductivity etc. Paint will give resistance to substrate.

Feedback on Webinar

The webinar was very friendly and interactive, this helped me gain the topic of a subject more knowledge and confidence.

This webinar is conducted by the department of chemistry made us more effective way of learning. We have learned more topic and understood in the good way. The online seminar was innovative in learning process and presentation where will.