



Dr. BRR. GOVERNMENT COLLEGE,  
JADCHERLA, MAHABUBNAGAR (Dist.)

Student Study Project

2021 -22

DEPARTMENT OF CHEMISTRY

Topic

# Pigments


Conducted by students

Name of the Student	Hall Ticket No.	Course
C SHAILAJA	210330064452027	BZC TM I Year
JERUPULA MALLESH	210330064452045	BZC TM I Year
JOGU ANUSHA	210330064452047	BZC TM I Year
SABHAVAT RAJU	210330064452089	BZC TM I Year
SABHAVAT SOUNDARYA	210330064452090	BZC TM I Year

Guided By

Smt. A. Rajani  
Asst. Prof. of Chemistry

  
Sign. of the Lecturer

  
1/s. Dept. of CHEMISTRY  
Sign. of the HOD  
BRR Govt. Degree College  
JADCHERLA

  
PRINCIPAL  
Sign. of the PRINCIPAL  
JADCHERLA

# Certificate

This is to certify that Pujit Singh Of XII-C Has accomplished this project entitled : To Prepare Pigments And Poster Paints Using Various Chemicals And Reagents. Under my Supervision and Guidance.

(Mr. Harsh Gupta)

# Contents

S. no.	Contents
1.	Acknowledgement
2.	Aim
3.	Theory
4.	Chrome Yellow
5.	Efficiency Of Chrome Yellow
6.	Prussian Blue
7.	Efficiency Of Prussian Blue
8.	Conclusion
9.	BiblioGraphy

## **Acknowledgement**

I would like to show my gratitude to my Chemistry Teachers Ms. Anita Sood & Mr. Harsh Gupta without whose support and encouragement this project could never have taken the present shape . I would also like to thank my lab incharge Mr. Vinod For helping Me out During The Practical Part Of This Project.

## Aim

To Prepare:  
Pigments  
And  
Poster Paints  
Using Various Chemicals And  
Reagents

# Theory

**1. Pigments** – A pigment is a finely divided material which contributes to optical and other properties of paints. Pigments may be classified according to their composition or source which they are obtained from. However the most common and useful classification is that color pigments can be made using simple chemical reactions and techniques.

**2. Poster Paints**- Grinding a pigment or a mixture to a very fine powdered and then suspending the powder in a very fine liquid makes poster paint so as to a uniform suspension. For making poster paints the pigments made by various chemical reactions are thoroughly mixed with the medium. Sometimes the paint hardens but the addition of lukewarm water to it can soften it.

**3. Medium**- Medium used for making paints is made by mixing 30ml of clear glue with 10ml of water and adding a drop of liquid detergent to it.

## Chrome Yellow

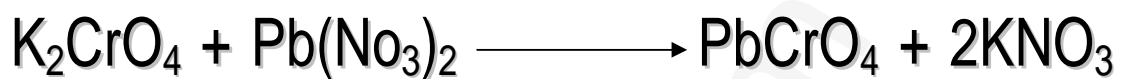
Chemically known as **LEAD CHROMATE** ( $\text{PbCrO}_4$ ) the yellow pigment is obtained as follows:

### Procedure-

1. Dissolve 7gm of Potassium Chromate in 50mL water and 10gm Lead Nitrate in 100mL water in Two Separate Beakers.
2. Pour The Potassium Chromate Solution in the Lead Nitrate and stir continuously.
3. Lead Chromate separates as precipitate and is the required pigment.

4. Filter the precipitate and dry the pigment.

Reaction Involved-





## Efficiency

Total mass of reactants used = (Excluding the mass of water used for dilution)

Mass Of Paint/Pigment Obtained =

Efficiency in formation of yellow colour

=

## Prussian Blue

Chemically known as Complex  
Ferro Cyanide ( $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ )

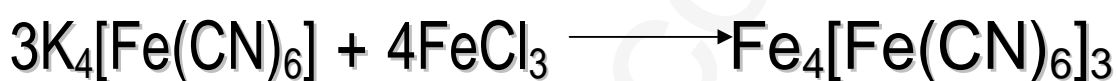
### Procedure

1. Make A solution of 5gm of Hydrated Iron(III) Chloride in 50mL of water.
2. Make a solution of 10gm of Potassium FerroCyanide in 75mL of water.
3. Add Iron Chloride solution into Potassium FerroCyanide( $\text{K}_4[\text{Fe}(\text{CN})_6]$ ) solution while stirring briskly.

4. A dark blue colour very fine powdered type substance precipitates.

5. Filter the precipitate and wash it with water. It takes along time to filter this substance.

Reaction involved



## Efficiency

Total mass of reactants used=  
(excluding mass of water used for  
dilution)

Mass of Paint/Pigment obtained=

Efficiency In Formation Of Blue  
Pigment Obtained is=

## Conclusion

Fine Poster Paints Were obtained using various Chemicals and Reactants.