

# A Concise Guide on Textile Dyes, Pigments and Dye Intermediates with Textile Printing Technology

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In the past, only organic matter was available for making dyes. Today, there are numerous options and methods for the colorization of textiles. While today's methods capitalize on efficiency, there is question as to whether the use of chemicals is harmful to the environment. A reputation for harming the earth could be detrimental to a company in a society becoming more and more focused on the environment and its preservation. Today, with the invention of synthetic materials used in textiles, many new types of dyes have been developed and put into regular use. There are two basic ways to color textiles: dyes and pigments. Pigments are not a dye but rather resins mechanically bound to fibers. Dyes are divided into classes according to the types of fibers they are most compatible with. Textile printing is related to dyeing but, whereas in dyeing proper the whole fabric is uniformly covered with one color, in printing one or more colors are applied to it in certain parts only, and in sharply defined patterns. Dyes will yield the softest hand (the "hand" is the feel of the fabric) and maintain the fabric's luster but the process is expensive. Pigments are much more economical to use. Pigments are generally more lightfast, more colorfast, and give greater color control. Pigment technology has developed tremendously in the past 15 years. 85% of the textile printing in the World is pigment printing. This book contains manufacturing process and other related details about Azine dyes, Azoic dyes, Azo dyes, Thiazole dyes, Triphenylmethane dyes, scientific classification of Vat dyes, fluorination of dyes, different types of pigments, applications, usages of dyes and pigments, quality control and evaluation of pigments and many more. This book will serve as a guide to Textile Technologists, Scientists and existing as well as upcoming industries.

## 1. AZINE AND RELATED DYES

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Dioxazines

Thiazines

Commercial Grades and Specifications

Methods of Analysis

Identification

Determination of Specific Structure

Assay Methods

Spectrophotometric Methods

Titration Methods

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Two Heteroatoms

Attachment at 2-position

Attachment at 1,2-position

Attachment at 2,3-position

Attachment at 1,9-positions

Vat Dyes Containing Six Membered Rings

One Heteroatom

Attachment at 1, 9-positions

Attachment at 3,4-position of benzanthrone

Six Membered Rings Containing more than one

Heteroatom (from Anthraquinone)

Attachment at 1-position

Attachment at 1,2-positions

Attachment at 2,3-position

Attachment at 1,9-position

Fused Ring System

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Material of Constructions

Indanthrene Brilliant Violet F3RK (C.I. 63350)

Indanthrene Blue CLB

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C.I. Pigment Yellow 3  
C.I. Pigment Yellow 3  
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Cl. Pigment Yellow 13  
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(b) Copper Sulphate + Sodium or Potassium

Dichromate + Acetic Acid:

(c) Chromium Fluoride or Acetate + Acetic Acid :

(d) Formaldehyde:

(e) Diazotization and Development:

(f) Coupling with diazotized Fast Bases:

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Chrome Dyes

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Dyeing Procedure

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Dyeing Procedure

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Mineral Khaki (Inorganic Colourant)

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Dark Olive Green/Scamic green shade for certain categories of

Cotton material for Defence services (India)

Topping with Mineral Khaki on pre-dyed material with

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Useful Information in Dyeing & Printing

(i) Liquor-to-goods ratio or Material-liquor ratio denoted as  
"M.L.R."

(ii) Depth of Shade in Dyeing

(iii) Padding

(iv) Depth of Shades in Printing

Printing of Textiles

Styles in Printing

They are:

Direct Printing Styles on Cellulosics

Printing with Reactive Dyes

Printing with Pigment Printing Compositions

Printing with Azoics

Naphthol-Nitrite Padding process

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