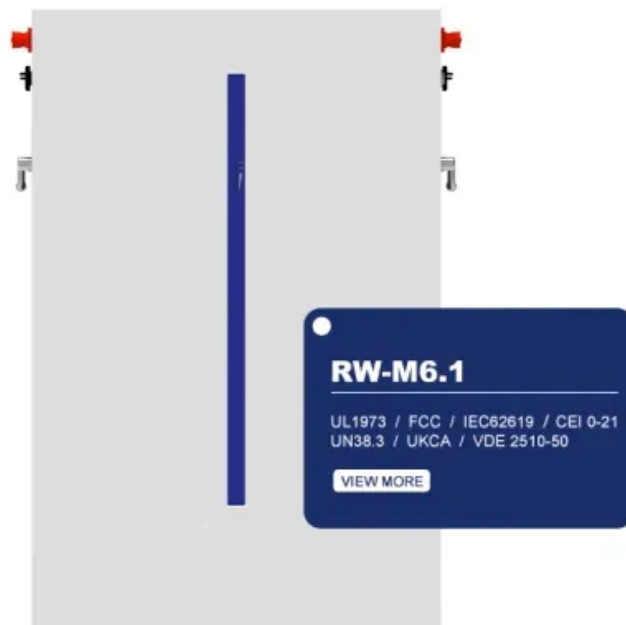


**JH Solar**

# Disperse dye energy storage



## Overview

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How are liquid disperse dyes produced?

Conventional liquid disperse dyes are typically produced via a top-down process, which possesses inherent limitations including high energy consumption. Antisolvent precipitation, as a bottom-up method, has not yet been widely adopted in commercial production of liquid disperse dye products.

What is a high energy disperse dye?

With a greater operating temperature, high energy disperse dyes are generally utilized for thermo-fixation. The optimal temperature for medium energy disperse dyes to be utilized in high temperature polyester dyeing is around 130 °C, resulting in outstanding dyeing effectiveness and colour output.

What is a disperse dye?

Disperse dyes are categorized based on their energy levels and are utilized in conjunction with reactive dyes for the dyeing of polyester/cotton fibres in two distinct compositional ratios. The dyeing conditions and the colour fastness properties of the dyed materials are intrinsically linked to this classification.

Why is the grinding process omitted in preparing liquid disperse dyes?

The grinding process is omitted to save energy and reduce consumption. More time-saving and the equipment is simpler. Provides good dyeing performance and dyeing lifting force. The objective of this study is to identify the optimal conditions for preparing liquid disperse dyes via the antisolvent precipitation method.

How long do liquid disperse dyes stay at room temperature?

The liquid disperse dyes were maintained at room temperature for varying periods of time, the dispersion performance is illustrated in Fig. 7 a and b. The

particle size distribution of the dyes remained largely unchanged after 180 days, with an average particle size growth of approximately 100 nm.

How does disperse dye ink work?

When the disperse dye particles approach each other, the long molecular chains from different particles overlap and form a three-dimensional network, which effectively prevents agglomeration of the dye particles and increases the stability of the ink system. Fig. 2 Dispersion mechanism of disperse dye ink.

## Disperse dye energy storage

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### Preparation of stable liquid disperse dye using the antisolvent

The objective of this study is to identify the optimal conditions for preparing liquid disperse dyes via the antisolvent precipitation method. Conventional liquid disperse dyes are ...

### The roles of elevated temperature and carriers in the dyeing of

However, the aqueous, immersion application of disperse dyes to polyester fibres is intrinsically flawed on both environmental and economic grounds: Elevated dyeing temperatures of 130°C ...



### Anthraquinone-2,7-disulfonic Acid Disodium Salt ...

Anthraquinone-2,7-disulfonic Acid Disodium Salt Uses Dye and Pigment Industry As an intermediate in acid dyes and reactive dyes, it improves the vividness and fastness of dyes. It can be used to synthesize ...

### The roles of elevated temperature and carriers in the dyeing ...

5. Advances in dyeing theory in general, including those relevant to polyester fibre dyeing using disperse cases relate specifically to disperse dyes and/or polyester fibres, the majority provide ...



## Technology progress and application prospects of liquid disperse dyes

Abstract: Significance Disperse dyes are special dyes for polyester fiber dyeing, commercially available mainly in powder and liquid forms. Powdered disperse dyes are widely used because ...

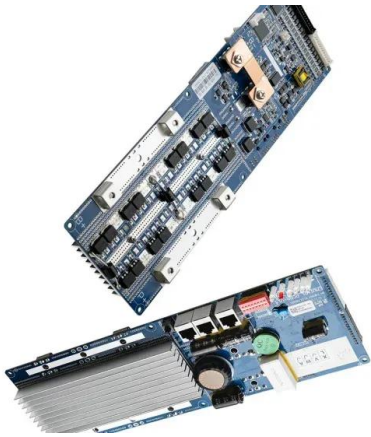
## Enhancement of dyeing Technology of Polyester fabric with ...

The obtained results confirm the possibility of reducing temperature, using less dyestuff, and saving energy of conventional dyeing of polyester -fabrics with a disperse dye via fabric pre- ...



## Disperse Dyes in 2025: Innovation, Efficiency, and the Road to

To reduce water and energy usage, many dyehouses have adopted low liquor ratio dyeing with disperse dyes. This method reduces dye effluent and improves fixation ...



## The roles of elevated temperature and carriers in ...

This review concerns the application of disperse dyes to poly (ethylene terephthalate) fibres using aqueous immersion dyeing processes and the roles of both elevated dyeing temperatures and carriers in the dyeing ...



## Rheological behavior and storage stability study of liquid disperse

Abstract Liquid disperse dyes (LDDs) have broad prospects of application due to their advantages in environmental sustainability, public health, and energy conservation.

????????????????????

The difference in the performance of the two types of disperse dyes leads to the realization of low water consumption and near-zero emission printing and dyeing technology of liquid disperse ...



ESS



## Technology progress and application prospects of liquid disperse dyes

Significance Disperse dyes are special dyes for polyester fiber dyeing, commercially available mainly in powder and liquid forms. Powdered disperse dyes are widely used because of their ...

## Synthesis and its application on fabrics of disperse dye ...

Abstract Background Utilizing waterborne polyurethane (WPU), the commercial dyes disperse red 60 (R60), disperse yellow 54 (Y54), and disperse blue 56 (B56) are ...

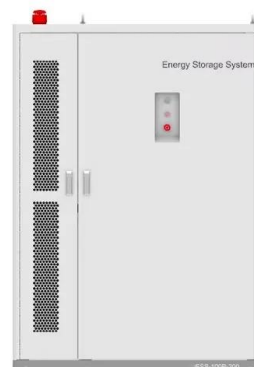


## Dye Application, Manufacture of Dye Intermediates ...

Dye-polymer interactions can involve ionic bonding (e.g., acid dyes on nylon or wool), covalent bonding (e.g., reactive dyes on cotton), mechanical entrapment (e.g., vat dyes and sulfur dyes on cotton), ...

## Disperse Dyes - Classification , Properties

The development of disperse dyes was carried-out to permit the dyeing of hydrophobic thermoplastic fibers (ex. acetate, triacetate, nylon, polyester, etc.).





## Simplifying complexity: integrating color science for predictable ...

By adding three typical disperse dyes as guests, we achieved a modulated afterglow covering the full visible light spectrum. Leveraging PRET processes between TAED ...

## The stability of disperse red/reactive-red dye inks

???,?????,????????,????????????,??????????????  
 ????? ?????????????? ?? ?????????????????? ...



## Effect of Different Energy Level Disperse Dyes in Dyeability of

A dyeing process conducted at a temperature of 98 °C is deemed appropriate for both polyester and cotton fibres, utilizing PEG-based reverse micelles as dye carriers in an ...

## Effect of Different Energy Level Disperse Dyes in Dyeability of

Disperse dyes are categorized based on their energy levels and are utilized in conjunction with reactive dyes for the dyeing of polyester/cotton fibres in two distinct ...



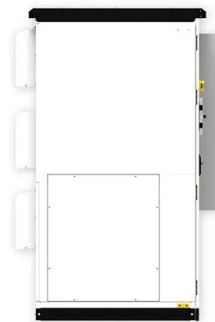


## Disperse Dye

Disperse dye has better coverage of barre than acid dye, but it is difficult to obtain dark shades, and some disperse dyes exert poor washing fastness, especially for relatively deep colour. ...

## Effect of Different Energy Level Disperse Dyes in Dyeability of

The presence of reverse micelles in the dye bath may render the dyeing behaviour of disperse dyes, categorized by varying energy levels, sensitive to fluctuations in dyeing temperature and ...



## Disperse dye

Disperse dye is a category of synthetic dye intended for polyester and related hydrophobic fibers. Disperse dyes are polar molecules containing anthraquinone or azo groups.

## DISPERSE DYES

For this reason, when dyeing polyester, disperse dyes are used in dye bath solutions at temperatures around 20 to 30° higher than the boiling point of the dye bath solution. At these ...



## Disperse dyes: Properties, Mechanisms, and Application

...

Disperse dyes, which are organic coloring compounds that lack ionizing groups and possess low water solubility, are ideal for dyeing hydrophobic textile mills via colloid ...



## Disperse dyes: Properties, Mechanisms, and ...

Disperse dyes, which are organic coloring compounds that lack ionizing groups and possess low water solubility, are ideal for dyeing hydrophobic textile mills via colloid dispersion. This distinct class of ...



## Simplifying complexity: integrating color science for predictable ...

By adding three typical disperse dyes as guests, we achieved a modulated afterglow covering the full visible light spectrum. Leveraging PRET processes between TAED and the disperse dyes, ...

## The characterization of disperse dyes in polyester fibers using ...

Multiple introduction methods were observed to verify the versatility of DART-MS for disperse dye analysis in multiple matrices. Solutions were analyzed first to confirm the dye ...





## HIGH TEMPERATURE STEAMING FOR DYE FIXATION

EXPERIMENT DESIGN 72 Introduction Yarns Structure and Specifications Yarns Preparation for Dyeing Padding Liquor Formulation Equipment Design Boiler Superheater Steamer ...

### Disperse dyes

Disperse dyes are also used for dyeing acrylic fibres, on which they have very good light fastness, but their use is restricted to pale shades because of their limited build-up ...



### Simplifying complexity: integrating color science for predictable ...

However, multi-color afterglow based on disperse dyes has not been explored until now. Leveraging the excellent processability, machinability, and scalability of host-guest doping ...

### Dianix

Dianix® CC Compatible range of economical, medium-energy dyes for rapid, reliable exhaust and continuous dyeing of polyester and its blends with other fibers Controlled Coloration®; excellent ...





## Review of new dyeing technologies for reactive dyes and disperse dyes

For disperse dyeing techniques, the first advancement is the development of alkali-resistant disperse dyes, which were created to solve the problem of water and energy usage during the ...

### Chapter 8: Disperse Dyes and Their Application to Polyester

A group of disperse dyes take advantage of the phenomena mentioned in the preceding two paragraphs and offers a number of disperse dyes, each of which is a mixture of several dyes

...



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