

A new colorant that reduces a number of coloring stages and the quantities of CO₂ emissions and wastewater.

New Energy-saving and Eco-friendly Colorant

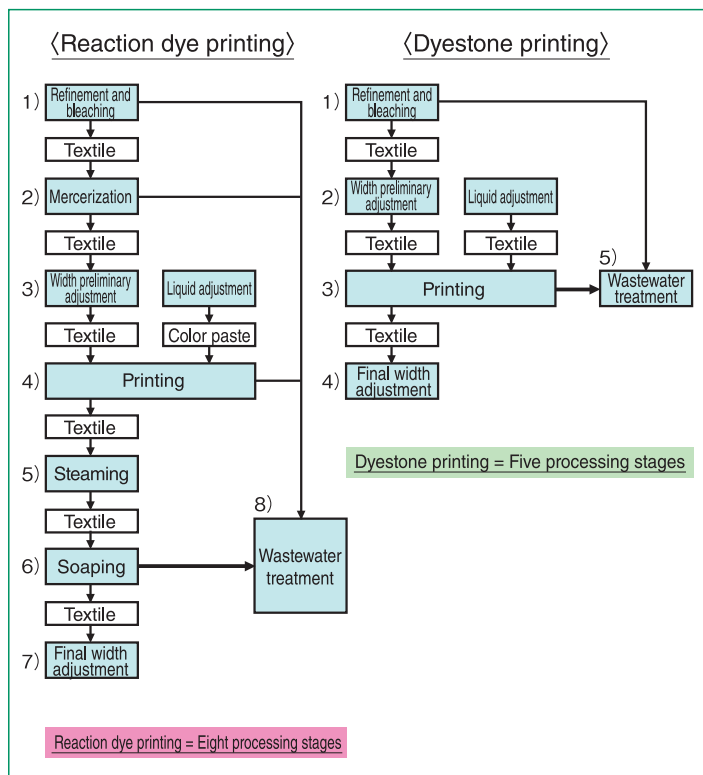
Features

- Requires a fewer number of stages to realize the coloring and texture of textile that are the same in quality as those accomplished by conventional dyes.
- Contributes to the reduction of energy consumption and wastewater because no steaming and soaping stages are required.
- Approved by the Eco-Tex Standard 100, the world's leading human ecology certification for textiles, to ensure safety of use.

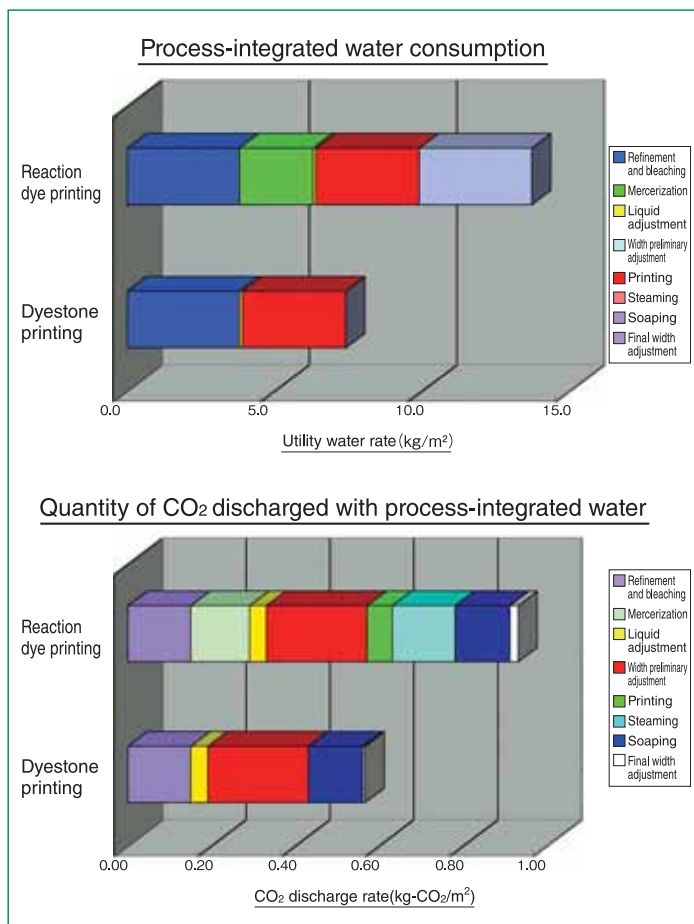
Overview

(Technical principles, actions, etc.)

The coloring process of fibers using dyes requires a steaming process, which uses a large amount of energy and a cleansing process called soaping, which also uses a large amount of energy and water. Meanwhile, coloring with pigments does not require a large amount of energy, but it used to be associated with problems such as insufficient coloring and stiffness in fabric texture. Our Dyestone is a fiber coloring agent that can contribute to the creation of a low-carbon energy society by having the advantages of both dyes and pigments. Dyestone makes colors adhere to fibers by making X-color with coated (encapsulated) water-soluble polymers react with the cross-linking agent on the surface on which insoluble pigments are finely dispersed. This is a third fiber colorant and is different from conventional pigments or dyes. This patented technology realizes clear coloring of dyes and a soft fabric texture in coloring processes using smaller amount of pigments, while also reducing CO₂ emissions and wastewater discharge by about 40%.



Processing stage comparison between reaction printing and Dyestone printing



Quantity comparison between utility water used and CO₂ emissions

Introductory Track Record

- Over 30 factories in Japan have been using the Dyestone. Besides, factories in the United States, South Korea, China, Taiwan, and Malaysia have been using the Dyestone. Matsui Shikiso Chemical is planning to promote Dyestone sales to Thai, Indonesian, and Mexican factories as well as more than 100 Japanese companies in future.

Effects

- Conventional dye coloring requires eight processing stages, while the Dyestone leaves out three stages out of them, which saves the consumption of utility water by approximately 40%, the reduction of wastewater, and the suppression of CO₂ emissions by approximately 40%. The conventional printing stage requires turpentine (an oil-based solvent), while the Dyestone substitutes it with water, thus mitigating environmental loads. Furthermore, the Dyestone consumes less energy, thus enables the reduction of energy cost. Besides, the reduction of processing stages in number shortens required turnaround time. Compared with conventional dye printing, the Dyestone reproduces design patterns sharply, which makes new design expression possible. The Dyestone is approved by the Eco-Tex Standard 100 to ensure safety of use.

Applicable field
Textile and coloring

Water

Energy saving/Energy recovery

Energy storage/Energy creation

New energy

Waste disposal/
Recycling/
Resource saving

Air

Soil

Other