

TECHNICAL TUESDAYS

TOPIC: Sequestering agents

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What is Sequestering Agent?

In chemistry, a sequestering agent is a substance that removes ions from a solution system by forming a ring which does not have chemical reactions with the ion which is removed.

Sequestering agents are commonly used for removing water hardness. They combine with calcium and magnesium ions as well as other heavy metal ions in hard water. They form molecules in which the ions are held so securely (sequestered) that they can no longer react.

A sequestering agent is also known as a chelating agent.

Common Area of Application of Sequestering agent in Textile Processing:

1. Desizing
2. Scouring
3. Bleaching
4. Dyeing

Reason for Using Sequestering agent in Textile Processing:

Water is an important ingredient in the recipes of textile wet processing.

Due to inadequate availability of good quality surface water, many textile units are compelled to use ground water. The quality of ground water is not always as good as surface water, and it could contain soluble calcium and magnesium salts, leading to hardness.

This hardness can be corrected by using a water softening plant, which can remove these metal salts and replace them with sodium salts, but these softening plants may not take care of other metal salts of Cu^{2+} , Ni^{2+} , Fe^{3+} , Cr^{3+} , etc, if present in raw water, and these metal salts can cause problems in textile wet processing.

Even though water is softened, unwanted metal salts can creep in from one or more sources, as mentioned below:

- a) Basic raw material - Mineral content of cotton, which varies from region to region, or higher iron content of raw water.



- b) Metal contamination during storage and transport of other ingredients such as Mild Steel drums used for dyes and chemicals. Basic chemical like caustic lye being transported in Mild Steel tankers or MS drums.
- c) Poor quality of piping used for water from the softening plant to the dye house.
- d) Rust during spinning, weaving or handling of the substrate.
- e) Iron contamination from machine parts such as joints, bolts, etc. which are made from non-specified material.

Wishing you a great week ahead!

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