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TECHNICAL TUESDAYS

TOPIC: Salts used in reactive dyeing

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Why is salt used in reactive dyeing?

The textile substrate and dye molecule, need not necessarily have homogeneous characteristics to combine with each other. In such cases, a catalyst is required to facilitate the dyeing action on fabric. Salt plays a crucial role as a catalyst.

Salt has an extremely high affinity for water. The benefits provided by salt are:

- To drive the dye into the textile during the dyeing process
- Salt leads are used to maximum exhaustion of dye molecules during the dyeing process
- Salt is used as an electrolyte for migration, adsorption and fixation of the dyestuff to the cellulose material

General salts used in reactive dyeing:

Common salt (Sodium Chloride)

Glabour salt (Sodium Sulfate Decahydrate)

Function of salt in the dyeing process:

The presence of salt in reactive dyeing increases the affinity of the dye towards the cellulosic substrate.

Salt increases the exhaustion rate of reactive dyestuffs by reducing the Zeta potential.

As reactive dyestuffs have lower affinity, more salt is required when using reactive dyestuffs in order to accelerate absorption.

While the amount of salt used varies according to the type of dyestuff, recently developed high-fixation dyestuffs with improved affinity allow for the usage of reduced salt.

Due to considerations of effectiveness and cost, both Glauber's salt and common salt (sodium chloride) are used in dyeing. In terms of their roles as inorganic salts, these two are effectively the same because the sodium cation is active in both.

Wishing you a great week ahead!

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arc@resil.com | www.resil.com