

Versetol series

Versetol MWA

Mercerising wetting agent for low temperature operations in cotton woven.

INTRODUCTION

When a drop of liquid is placed on a solid surface, the liquid may form a bead on surface, or it may spread to form a film. A liquid having strong affinity for solid. i.e. if its surface tension is less than the critical surface tension of the surface, will seek to maximize its contact (interfacial area) and spread to form a film. However, if its surface tension is more, it will form a bead. In other words the object of wetting step is the rapid and thorough displacement of air from the surface of the solid so that uniform penetration of various other chemicals may be effected.

The success of the mercerising process depends on the thorough penetration of viscous solutions of sodium hydroxide into the individual fibres of yarns or fabrics being mercerised. The fats and waxes present in the cotton fibres (for grey mercerising) offer considerable resistance to the wetting of the fibres and the high surface tension renders the penetration extremely difficult. Grey cloth contains size (tallow, starch, paraffin wax, dextrin etc.). When such a cloth is impregnated with caustic soda solution, the starch swells, which, being an exothermic reaction, local heating takes place, leading to uneven mercerising.

Furthermore, swollen starch forms a gelatinous film and the wash waters should be discarded without recovering the caustic soda, unless special methods involving the use of dialyzers are employed for the caustic recovery. Hence it is much better to mercerise after desizing, washing and drying.

Mercerization improves the following properties of cotton:

- Strength retention following application of easy- care finishes.
- Colour yield for a given dye concentration.
- Dye coverage of immature fibres.
- Chemical reactivity.
- Tensile strength.
- Lustre.

STALWART ADVANCE MATERIAL INDS

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FEATURES

- Has high wetting power
- Does not have adverse effect on the control systems of Caustic liquor strength.
- Is stable over a wide range of sodium hydroxide concentrations.
- Is not preferentially adsorbed by the fibre being treated.
- Does not give rise to excessive foaming or turbidity in the solution
- No deposits on the fiber or machine parts.
- Does not interfere with the caustic recovery from the wash liquors after mercerizing.
- Is low-foaming.
- Free from APEO, nitrogen and phosphorous.

PROPERTIES

Appearance	Clear colourless liquid
pH (10%)	approx.10.0
Ionic character	Anionic

Compatibility with

Cationics	Poor
Anionics	Good
Non-ionics	Good

Stability to

hard water	Good
alkali	Good (upto 200 g/l)
temperature	Good

SCOPE OF APPLICATION

In mercerizing 4T's are important.

- 1) Twaddle (Concentration of NaOH): If the concentration of NaOH is increased above 56°Tw, improvement in luster will be attained but if it is decrease below 48° Tw, the quality of luster will begin to be adversely affected.
- 2) Temperature: High degree of luster is attained at temperature 18-20oC. As the temperature is increased, the quality of luster is adversely affected but on lowering the temperature no improvement in the luster is obtained.

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- 3) Tension: For acquiring better luster the material must be stretch to its original dimension (both in warp and weft direction during mercerization). If the material is allowed to shrink during mercerizing then quality of luster will be impaired. On the other hand if the material is stretched more, no improvement in luster is achieved.
- 4) Time: The optimum time for mercerizing is 30-60 seconds. By increasing the duration of time no applicable improvement in the quality of mercerization can be achieved. But if the time limit is less than 30 seconds, then the quality of mercerization will be improved.

DOSAGE:

0.75 – 1.5% (on vol. Of NaOH liquor) **Versetol MWA** is recommended.

Caustic concentration – 52°Tw.

Continuous mercerising and bleaching system for tubular knitted fabrics

Mercerising process can also be carried out on tubular knitted goods. After the wetting process, the fabric is left reacting in a padding mangle. The withdrawal of the fabric width is controlled by means of an adjustable ring spreader while the withdrawal of the fabric length is controlled by slowing down the fabric before the final squeezing. The sodium hydroxide concentration is brought down to approximately 4° Bé by means of a circular shower. The fabric is then washed, neutralised and rinsed.

STORAGE AND HANDLING

Precautions for safe handling	Do not eat, drink or smoke while handling the product.
Conditions for safe storage	Store in a cool, dry & ventilated area away from the sources of heat.
Shelf Life	6 months.

Note: Kindly refer SDS for further information on Storage & Handling.

Versetol is a registered trade name of Stalwart Advance Material Inds.

The information and recommendations presented here were based on our general experience and correspond to the state of our knowledge. They are intended to service as non-binding guidelines and must be adapted to the prevailing conditions. We cannot accept liability for any injury, loss or damage resulting from reliance upon such information.

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