

Fixative TCO-72

Benefits

- No contamination of goods, effluent or environment
- Excellent water, severe perspiration and hot pressing fastness and improved fastness to washing.
- Very good wash fastness.
- No impairment of fastness properties after heat treatment or in storage under adverse conditions.
- Prevention of dye migration during drying
- No impairment of fastness properties during steaming.
- Good reproducibility.
- Effect less marked than with products containing formaldehyde.
- Easy dependable application
- Negligible effluent pollution, high cost, effectiveness.

Characteristics

- Contains no formaldehyde or zinc
- Markedly improves the wash fastness and other wet fastness properties of dyeings with direct dyes.
- Applicable in conjunction with resin finishing of direct dyeing
- Protects dyeings and prints produced with reactive dyes against hydrolysis and thermo cracking.
- Migration protection for reactive and direct dyes.
- Good stability to steaming.
- Only very slight dye-specific shade changes.
- Only very slight dye-specific impairment of light fastness.
- High affinity, low pH-dependence.
- High exhaustion.
- No harshening of handle

Properties

- Chemical constitution: Aqueous preparation based on polyethylene polyamine.
- Ionic character: Cationic
- Physical form: Clear, yellowish, low-viscosity liquid
- pH (5% solution): About 7.5
- Specific gravity at 20°C: About 1.1
- General stability: Highly stable in hard water and to acids, alkalis and electrolytes in the amounts usually encountered in textile processing.
- Storage stability: Stable for at least one year at 20°C in closed containers.
- Compatibility: Can be used together with cationic and nonionic substances.

- Ecology/toxicology: The usual hygiene and safety rules for handling chemicals should be observed in storage, handling and use. The product must not be swallowed.

Application

Dissolving/diluting

Fixative TCO-72 can be diluted in all proportions by pouring on cold water. Stock solutions are stable for prolonged periods.

Required amount

The amount of Fixative TCO-72 required depends on type of dye and desired shade depth.

The best effects are obtained by applying Fixative TCO-72 as follows:

★ Batchwise exhaustion

Reactive dyes	0.16-1.3%	TCO-72
Direct dyes	0.7-1.9%	TCO-72
20 min at	40°C	
	pH 6–7 (adjusted with acetic acid)	

To ensure levelness we recommend in principle a minimum amount of 3% on cheese dyeing unit

★ Continuous application

◆ Pad mangle

Reactive dyes	7-13 g/l	TCO-72
Direct dyes	12.7–19 g/l	TCO-72

◆ Open-width washing machine

Reactive dyes	1.3–3 g/l	TCO-72
Direct dyes	2–5 g/l	TCO-72
Temperature about	30°C	
pH 6–7 (adjusted pH with acetic acid)		

◆ Aftertreatment of prints

Exhaustion	0.3–1.3%	TCO-72O
Open-width washer	1.3–3g/l	TCO-72
20–30 min at	30–50°C	
pH 6–7 (adjusted with acetic acid)		

◆ Resin finishing

	9.5–19 g/l	TCO-72
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Notes

▲ TCO-72 exhausts on to the fiber at a medium rate and has good leveling power, which can be improved by setting pH at 6-7 and the temperature at no more than 40°C. To improve the exhaustion rate under high concentration in post-treatment bath, adjust

the pH of acetic acid to about 4 and treat for 5-10min. TCO-72 will be almost exhausted under such conditions.

▲ Cationic and nonionic softeners can be applied together with TCO-72. The best softening effects are obtained by a one-bath, two-stage procedure, the softener being applied first, and the goods then treated with TCO-72 in the same bath.

▲ The application of TCO-72 in resin finishing usually can significantly reduce the free formaldehyde on the fabric produced.

▲ Fastness can reach level 4 if SOLOPHENYL dye is used, and the processing method is exhaustion.

40°C washing test 1/1 of standard shade depth

50°C washing test 1/3 of standard shade depth

▲ When processed with resin finishing at the same time, TCO-72 can markedly improve wash fastness, especially used for all-cotton fabrics and cotton-polyester blended fabrics. (can reach level 4 under the conditions of 1/1 standard shade depth and 50°C)

★ To correct faulty dyeing:

If TCO-72 has been applied evenly, simple masking with only a slight stripping action is enough to permit subsequent redyeing or shading.

◆ To add color/ redye

3% INVALON® DAM

2-3 ml/l formic acid 85% 30 min at 90 ° C

The goods are then thoroughly rinsed and neutralized and treated again with TCO-72.

Procedure for correcting unevenness

◆ To correct unevenness

Stage 1: stripping the dyeing

Stage 2: masking the cationic charge on the cellulose

3% INVALON® DAM

2-3 ml/l formic acid 85% 30 min at 90 ° C

The goods should be then thoroughly rinsed by cold water, dyed and treated with TCO-72.

Corrected faulty dyeings may be left with impaired light fastness as a result of the masking treatment.

◆ Procedure for stripping of dyes and TCO-72

Removal of TCO-72 before redyeing can guarantee a satisfactory levelness and rubbing fastness.

Method 1 (alkaline)

10 ml/l caustic soda 30%

1 g/l INVALON® NA

45 min at 85°C (or 20 min at 120°C), then rinse and neutralize

Method 2 (acid)

3 g/l potassium persulphate

1 g/l INVALON® ST

45 min at 80°C, then rinse and neutralize

Method 3 (oxidation)

5 ml/l hydrogen peroxide 35 % w/w

2 ml/l caustic soda 30% 30 min at 80°C, then rinse and neutralize

Storage and Packaging

Plastic bucket 125kg. 6-month shelf life under room temperature.

The uses and dosage provided above is based on data obtained through our own experiment. The information is only for your reference. Therefore we strongly recommend that our clients use the product basing on the conditions of their own equipment and experiment result.