

Technical - Information

# **AVCO-FIX N40**

FIXING AGENT FOR DYEING POLYAMIDE FIBRES

AVCO-FIX N40 is an after-treatment agent to improve wash-fastness of polyamide fibres dyed with acid dyestuffs. It is also used as a resist agent in dyeing polyamide blends.

## SPECIFICATIONS:

Appearance	Brown clear liquid.
Chemical nature	Aqueous solution of synthetic resin.
lonic type	Anionic.
Solubility	Miscible with water at any ratio.
pH (10% sol)	7.5 – 8.5
Compatibility	<ol> <li>Compatible with non-ionic and anionic products.</li> <li>Incompatible with cationic dyestuffs and auxiliaries.</li> <li>Incompatible with acids, and alkalis.</li> </ol>
Storage	Freezes below 0°C. Fully usable after thawing. Shelf life is at least 12 months.

PROPERTIES & USES:

- 1. Very effective for improving wet fastness properties of acid dyes on polyamide.
- 2. Minimum effect on shade and high fastness of dyed fibres.
- 3. Resist agent for dyeing polyamide/wool blends, particularly effective when 1:2 pre-metallized dyes are being applied.
- 4. Resist agent for dyeing wool/cellulosic and polyamide/cellulosic blends with direct dyestuffs.
- 5. Excellent fixing agent for polyamide fabrics printed with acid dyes, to prevent staining of white grounds.
- 6. No effect on treated fabrics handle.
- 7. Suitable for application in high-speed jet machines.



APPLICATION:

## 1. After treatment of polyamide

The concentration of AVCO-FIX N40 necessary to achieve the maximum improvement in fastness is influenced by the depth of shade being after-treated, the particular dye being used, and the substrate.

Generally, use: 2 - 5% of AVCO-FIX N40.

After treatment may be carried out either in the cooled dye-bath or in a fresh bath under acidic conditions to maximize the exhaustion onto the fibre. Ideally, the bath should be adjusted to pH 3 - 4 with acetic or formic acid, followed by the pre-diluted fixing agent.

Treatment should be carried out at a temperature which will ensure optimum results for the quality and type of polyamide being treated. Usually the temperature is about 80°C. The treatment time is for 20 minutes.

## 2. After-treatment of predyed polyamide in a separate bath

AVCO-FIX N40	2 – 5	%
Formic acid (85%)	1 – 2	g/l
Adjust pH to 4.		

Treat at 80°C for 20 min.

Drop the bath and rinse at 50°C.

# 3. One bath, two steps dyeing and after-treatment

Dye according to the following recipe:

AVCO-LON NAL	1 – 3	g/l
Acid dyestuffs	Х	%
AVCO-BUFFER DLT HC	0.5 – 1.5	g/l

Heat up: from 30°C to 98°C (1°C/min)

Run at 98°C for 60 min.

Cool down to 80°C.

Check PH 4 - 5.

Add 3 - 5% of AVCO-FIX N40 (slow dosing, over 15 min).

Run at 80°C for 20 min.

Drop the bath.

Rinse well at 50°C.

## 4. Resist agent for dyeing wool/cellulose and polyamide/cellulose blends

Quantities required are largely depending on the dye being used and the particular blend dyed. The use of 3 - 5% of AVCO-FIX N40 should be adequate for most purposes.

To avoid staining of the PA fibres by direct dyes, when dyeing blends with cellulose, use the following recipe:

AVCO-LON NAL	1 – 3	g/l
AVCO-FIX N40	3 – 5	%
AVCO-BUFFER DLT HC	0.5 – 1.5	g/l



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Direct dyes	Х	%
Acid dyes	Y	%

Dye at 98°C for 60 min, cool down to 80°C, run 15 min.

Drop the bath.

# 5. Resist agent for dyeing wool/polyamide

The quantities of AVCO-FIX N40 required depend primarily on the dyes used and on the type of polyamide fibre. Nylon 6, for example requires higher quantities of blocking agent than does nylon 6.6. The exact amount required is best determined by preliminary trials. It has been found that 2 - 4% of AVCO-FIX N40 are adequate for most purposes.

# 6. Special improvement of wet fastness of microfibres

Since microfibers need more dyestuffs to reach the needed depth, improving of fastness is essential.

Treat with 3 - 5% of AVCO-FIX N40 at pH 4, 80°C for 30 min.

Rinse well at 50°C (4 times).

Treat with 2 - 4% AVCO-FIX ECO at pH 5, 40°C for 15 min.

AVCO-FIX ECO treatment can also be done on the stenter frame before final drying/fixing.

# 7. Stripping-off AVCO-FIX N40

To correct dyeing, the AVCO-FIX N40 should be stripped off the fibres.

Typical recipe:	
Ammonia (25%)	3 – 5 cc/l
AVCO-DISPERSANT NS	2 – 4 g/l
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Treat at 98°C for 30 min.

1 cc/l caustic (50%) can also be used instead of ammonia, but there is a distinctly influence on shade.

## REMARKS:

- Care should be taken to avoid any residues of non-ionic/cationic levellers such as fatty amine polyglycols on the fibres. Fabrics should be rinsed well before the treatment with AVCO-FIX N40.
- 2. Do not mix the product with concentrated acids.