

# AVCO-STABILIZER HP

## SILICATE FREE ORGANIC STABILIZER FOR HOT PEROXIDE BLEACHING

AVCO-STABILIZER HP is a synergistic blend of organic complexes. Their combination is particularly suits for the stabilization of the peroxide in hot alkaline bleaching baths for bleaching cotton, viscose and blends with polyester.

AVCO-STABILIZER HP does not contain any silicates; therefore, the stabilization can be obtained either with or without the use of silicate.

AVCO-STABILIZER HP is free from surface-active substances and is non foaming.

### SPECIFICATIONS:

<b>Appearance</b>	Clear yellowish liquid
<b>Chemical nature</b>	Aqueous solution of magnesium complexes of polyhydroxy compounds, polycarboxy acids and phosphonates.
<b>Ionicity</b>	Anionic.
<b>Density (g/cc)</b>	1.05 -1.10
<b>pH (10% sol.)</b>	5 ± 1
<b>Solubility</b>	Miscible with water at any ratio.
<b>Compatibility</b>	Good with anionic products, alkalis and electrolytes. Is not compatible with cationics
<b>Storage stability</b>	Stable for at least 12 months.

### PROPERTIES & USES:

1. AVCO-STABILIZER HP is an organic stabilizer that provides a perfect peroxide stabilization, without the use of silicate. When a high alkalinity and/or elevated temperature becomes responsible for an increase in the decomposition rate of the hydrogenperoxide, AVCO-STABILIZER HP slows down such processes and make it happen in a controlled mode.
2. AVCO-STABILIZER HP serves to stabilizing the alkaline peroxide bleach liquor at temperature 95 – 100°C and in HT conditions. Contrary to the use of sodium silicate, there is no risk of precipitation when using AVCO-STABILIZER HP.  
This obviates the need for the time and labor consuming for cleaning especially of HT and continuous ranges

## Technical – Information

3. Fabrics bleaching with AVCO-STABILIZER HP are highly absorbent, have very low ash content and soft handle. Fibre impurities which are difficult to remove such as calcium and magnesium pectinates, or other alkaline earth compounds originated from defoliantes or minerals naturally present in the raw cotton, are removed by the complexing capacity of AVCO-STABILIZER HP.
4. The use of AVCO-STABILIZER HP counteracts the risk of pin holes caused by catalytic decomposition of peroxide due to the presence heavy metal ions in the bleaching liquor.
5. AVCO-STABILIZER HP is compatible with other auxiliaries without causing any separation of the bleaching liquor.

### APPLICATION:

Depending on the method applied, use 20-30% of AVCO-STABILIZER HP are added, calculated on the amount of Hydrogen Peroxide (50%) used. The quantities of alkali and peroxide depend on the kind of the pretreatment, The quantity of the fabric to be bleach, the process applied, as well as on the time and the temperature of the treatment.

Peroxide bleaching liquors are ideally prepared with soft water. The stabilizing effect of AVCO-STABILIZER HP is altered very little, if water with a higher or lower degree of hardness is used.

When preparing the bleaching liquor, it is recommended to add the ingredients in the sequence in which they are listed in the following recipes.

The whiteness of the bleached fabrics can be improved by using hot water containing AVCO-POLYQUEST 1096S in the first rinsing bath (add 1-2 g/l). Such treatment will enhance the brilliance, especially of optically brightened material. The second rinsing bath should be carried out at 80°C and the last rinsing bath should be cold.

### RECOMMENDED RECIPES :

#### **Fully continuous Processes on de-sized fabrics**

##### **1. Peroxide bleaching by the steaming method at temperatures up to 105°C ( on a roller bed steamer):**

AVCO-STABILIZER HP	6 – 10 g/l
AVCO- BLANK JET HB-LF	3 – 4 g/l
Caustic soda (50%)	12 – 25 cc/l
H <sub>2</sub> O <sub>2</sub> (50%)	20 – 40 cc/l
The dwell time in the saturated steam atmosphere is usually 15 – 20 minutes.	

##### **1. Open Width J box Bleaching:**

AVCO-STABILIZER HP	8 – 10 g/l
AVCO- BLANK JET HB-LF	3 – 4 g/l
Caustic soda (50%)	5 – 10 cc/l
H <sub>2</sub> O <sub>2</sub> (50%)	25 – 35 cc/l

Liquor pick-up : about 100%  
 Bleaching temperature: 100°C  
 Dwell time: 10 – 30 minutes

*Technical – Information*

**Semi continuous Processes**

**Peroxide bleaching by the pad roll method:**

AVCO-STABILIZER HP	6 – 10 g/l
AVCO-BLANK JET HB-LF	3 – 7 g/l
Caustic soda (50%)	3 – 6 g/l
H <sub>2</sub> O <sub>2</sub> (50%)	25 – 35 cc/l

The dwell time in the batch box, at temperature of 95°C , should be about 2 hours

**Exhaust process**

**High liquor ratio machines:**

**Bleaching in Jet machines :**

AVCO-STABILIZER HP	0.5 – 1.0 g/l
AVCO- PAL VIC	1 – 2 g/l
AVCO-SLIP RF	1 – 2 g/l
Caustic soda (50%)	2 – 3 cc/l
H <sub>2</sub> O <sub>2</sub> (50%)	3 – 4 cc/l

Bleach at 90 – 95°C for 45 – 60 minutes  
Add anti-crease agent if needed.

**GENERAL INFORMATION :**

Following are the conversion factors related to the calculation of the bleaching liquor recipes:

1ml H<sub>2</sub>O<sub>2</sub> (35%) = 0.66 ml H<sub>2</sub>O<sub>2</sub> (50%)  
1ml H<sub>2</sub>O<sub>2</sub> (50%) = 1.51 ml H<sub>2</sub>O<sub>2</sub> (35%)

1g of caustic soda = 2.50 ml caustic soda solution 36° Bé (66.4 Tw)  
1.44 ml caustic soda solution 38° Bé (71.4 TW)  
1.64 ml caustic soda solution 38° Bé (71.4 TW)  
1.33 ml caustic soda solution 50°B é (106.0 TW)

In practice, a 50° Bé caustic soda solution is equivalent to a 50% solution

In order to calculate the concentration of chemicals required in the replenishing liquor for a wet on wet impregnation bleach- presuming an almost 100% liquor turnover- the factor F must first be determined according to the following equation :

$$F = \frac{(\text{L.P.U. after impregnation})}{(\text{L.P.U. after impregnation}) - (\text{L.P.U. before impregnation})}$$

\* L.P.U. – Liquor Pick Up

The concentration of the replenishing liquor ( Cr) is determined by multiplying the desired concentration of the individual chemical (Ci) in the impregnating liquor by factor "F"

**Example :**

Liquor pick up after impregnation : 100%  
Liquor pick up before impregnation : 60%

# **Technical – Information**

$$F = \frac{100}{100 - 60} = 2.5$$

As a result, the replenishing liquor must be prepared 2.5 times stronger than the concentration in the impregnating liquor.

Cr = Concentration

## **Following are some bleaching formulations:**

1. Pre-bleach in Jig(L.R. 1:3 - 1:5) of desized cotton and polyester cotton fabrics

AVCO-PAL VIC	1.0 - 2.0	g/l
AVCO-STABILIZER HP	0.5 - 1.5	g/l
Caustic Soda (100%)	0.5 - 2.5	g/l
Hydrogen Peroxide (35%)	3.0 - 10.0	cc/l

Bleach at 90 - 95°C for 1 - 1 1/2 hrs.

2. Full bleach in jets (L.R. 1:6 - 1:10) of cotton and polyester-cotton knits.

AVCO-PAL VIC	0.5 - 1.5	g/l
AVCO-STABILIZER HP	0.5 - 1.0	g/l
Caustic Soda (100%)	0.8 - 1.5	g/l
Hydrogen peroxide (35%)	3.0 - 10.0	cc/l
AVCO-LUX BK-R	X %	

Bleach at 90 - 95°C for 30 - 60 min.

3. Pre-bleaching of cotton garments in a paddle machine (L.R. 1:15-1:20)

AVCO- PAL VIC	0.5 - 1	g/l
AVCO-STABILIZER HP	0.5 - 1	g/l
Caustic Soda (100%)	0.5 - 1	g/l
Hydrogen peroxide (35%)	3.0 - 10.0	cc/l

Bleach at 90°C for 1 - 1 1/2 hrs.

4. Rayon fabric or rayon staple pre-bleaching (L.R. 1:10).

AVCO-PAL VIC	0.5 - 1.5	g/l
AVCO-STABILIZER HP	0.5 - 1.0	g/l
Soda Ash	3.0 - 5.0	g/l
Hydrogen Peroxide (35%)	1.0 - 1.5	cc/l

Bleach at 70 - 80°C for 45-60 min