

# DYEING PROCESS FOR POLYESTER

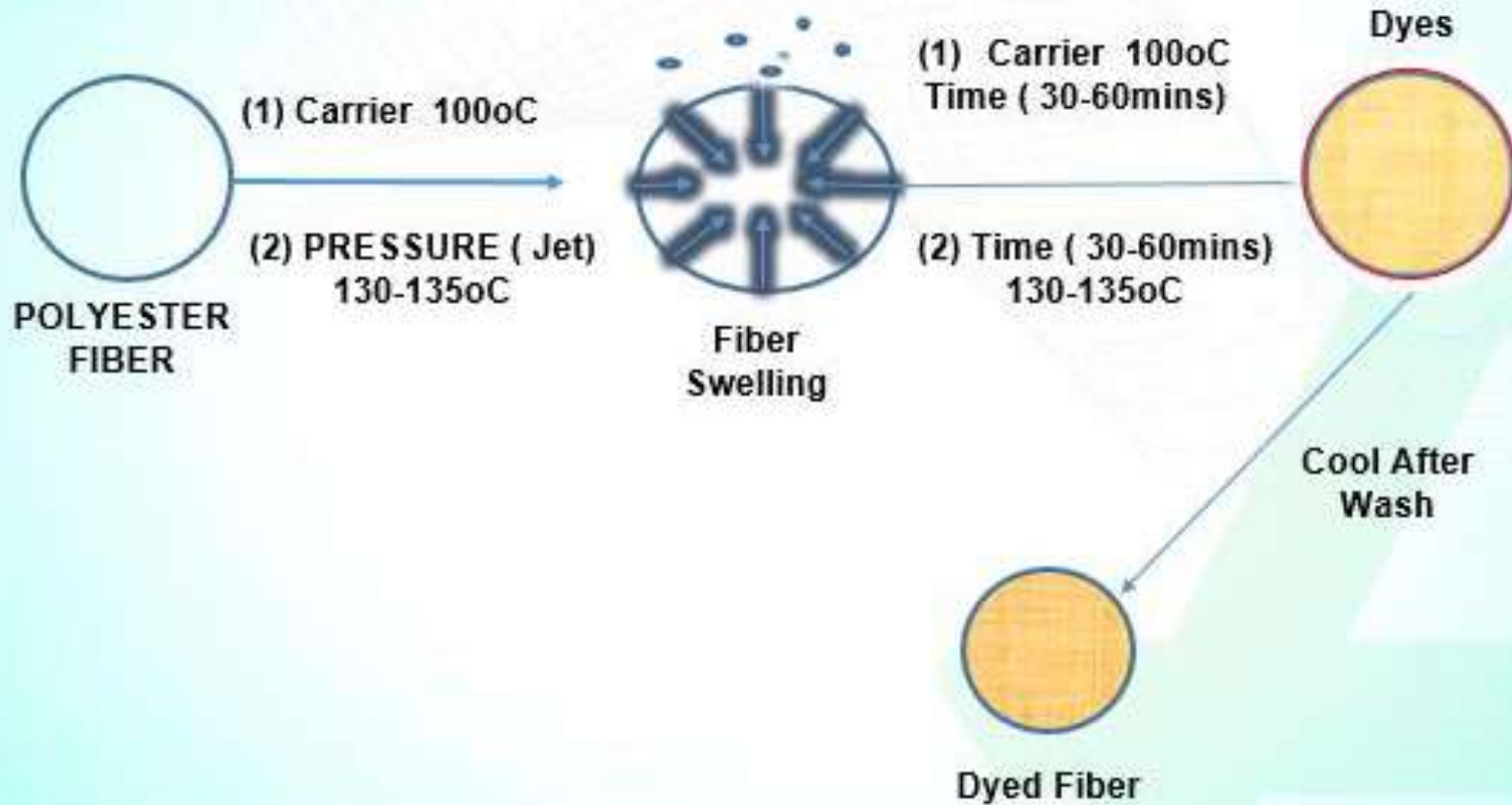
FULL AUXILIARIES  
FOR DISPERSE DYES ON POLYESTER FIBER



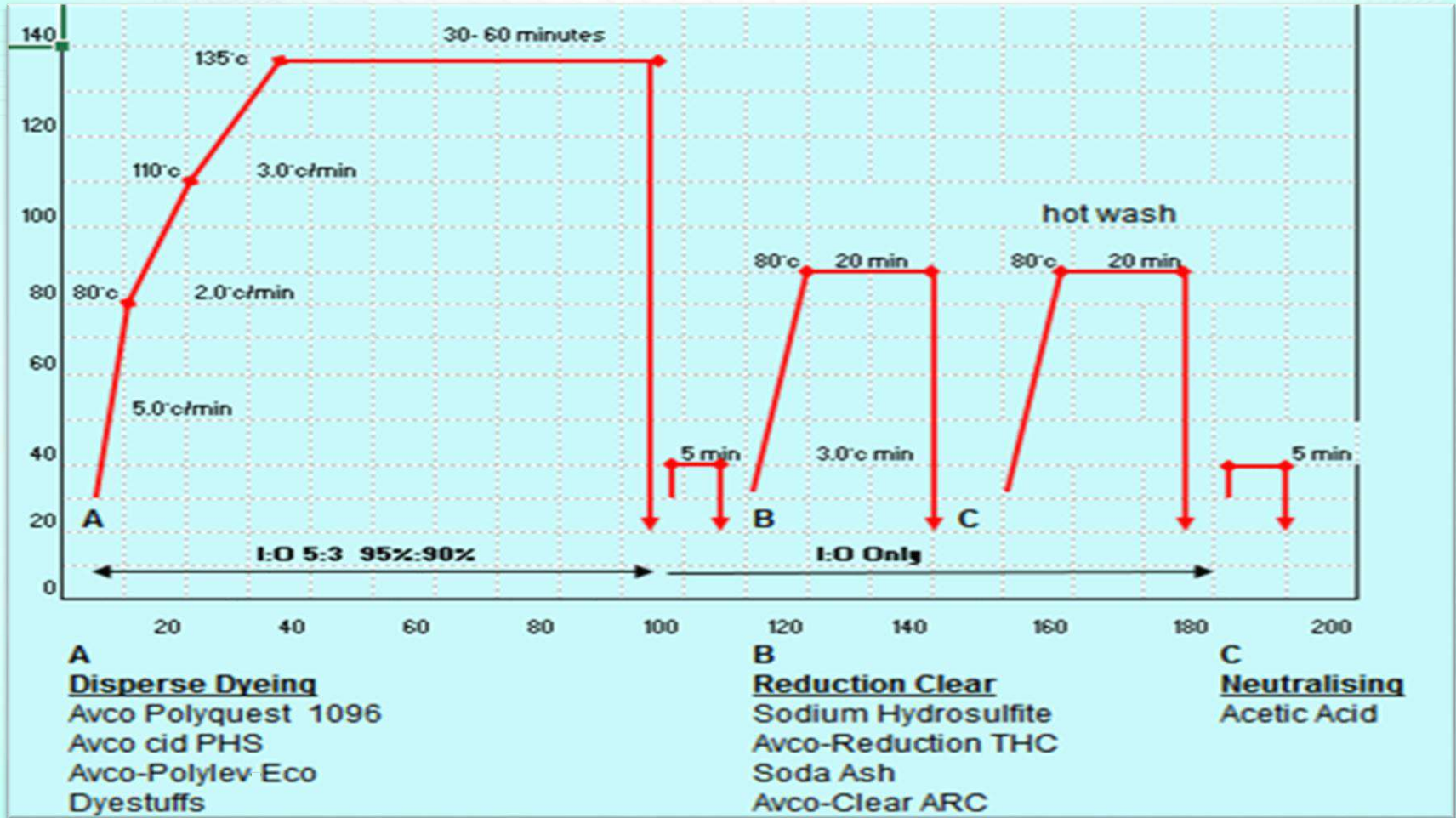
**AVCO**chem<sup>®</sup>

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# DYEING POLYESTER WITH DISPERSE DYES



# DYEING PROCESS



# DYEING AUXILIARIES FOR POLYESTER

PRODUCT SẢN PHẨM	USE CÔNG DỤNG	IONICITY ĐỘ ION HÓA	DOSAGE LIỀU LƯỢNG
AVCO-POLYLEV ECO	Levelling Agent	Slightly anionic	1.0 g/l – 3.0 g/l
AVCO-CID PHS NEW	Acid Buffer	Nonionic	0.5 g/l – 1.0 g/l
AVCO-POLYQUEST 1096	Sequestering Agent	Anionic	0.7 g/l - 1.0 G/L
AVCO-GEN DOA	Oligomer Dispersant	Nonionic/weakly anionic	0.5 g/l – 1.0 g/l
AVCO-ACCELERATOR PED NEW	Stripping and Levelling Agent	Anionic / nonionic	1.0 g/l – 3.0 g/l
AVCO-CLEAN OGM ECO	Machine Cleaner	Cationic/Nonionic	1.0 g/l – 3.0 g/l
AVCO-CLEAR ARC	Acid Reduction Clearing Agent	Nonionic	1.0 g/l – 3.0 g/l
AVCO-REDUCTION THC	Alkali Reduction Clearing Agent	White powder	1.0 g/l – 3.0 g/l
AVCO-L PET	Soaping Agent	Anionic//Nonionic	0.5 g/l – 1.5 g/l
AVCO-BIOSOL 1040	Oil Remover	Nonionic	1.0 g/l – 2.0 g/l

# FINISHING

AVCO PRODUCTS SẢN PHẨM AVCO	APPLICATION ỨNG DỤNG	DOSAGE LIỀU LƯỢNG
AVCO-SILICONE 1000	Lubricant / Winding thread at room temperature	
AVCO-SEW HM	Lubricant / Winding thread , Melting boil at 80-90oC	
AVCO-LUB ROSIL MTL	Lubricant / Winding thread , Melting boil at 60-70oC	
AVCO-ELASTOGUM MEC	Macro Silicone	10 g/l - 20 g/l
AVCO-ELASTOSIL 9016	Block Silicone	10 g/l - 20 g/l
AVCO-NAV SR	Hydrophilic Silicone	10 g/l - 20 g/l
AVCO- PHOB 6410	Warter Repellent	30 g/l - 60g/l

# LOW FOAMING LEVELING AGENT

## AVCO-POLYLEV ECO

### Advantages

- ✓ Low foam, very strong penetrating power.
- ✓ Excellent dispersing power at high temperature, particularly suitable for some sensitive dyes when dye specks and spots often occur.
- ✓ Excellent migration property to gain level dyeing.
- ✓ Little impact on color change, brilliant color can be produced.
- ✓ Very effective levelling power.

### MIGRATION AND LEVELLING

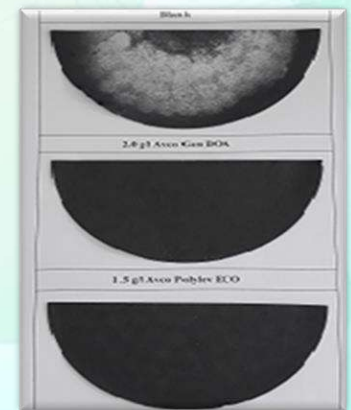
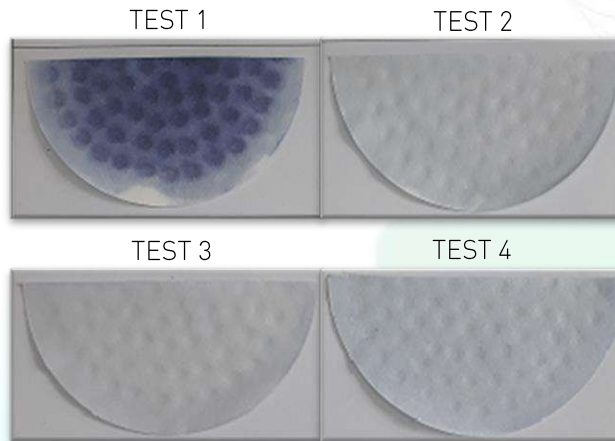
### DISPERSING DYESTUFF

### OLIGOMER DISPERSANT

Products	Concentration (g/l)			
	Test 1	Test 2	Test 3	Test 4
Polylev-ECO	Blank	2.0	3.0	
Competior's product				2.0
Cid- PHS New	0.5	0.5	0.5	0.5
pH	4.8			
Process :dyeing at 130 oC x 30 mins → Hot water → Cool drain				

Products	Concentration (g/l)			
	Test 1	Test 2	Test 3	Test 4
Polylev-ECO	Blank	1.0	1.5	
Competior's product				1.0
Syntopers Navy HGL 200%	0.5 %	0.5%	0.5%	0.5%
Cid- PHS New	0.5	0.5	0.5	0.5
pH	4.8			
Process :dyeing at 130 oC x 5 mins → Cool -> Filter				

Products	Concentration (g/l)		
	Test 1	Test 2	Test 3
	BLANK		
AVCO-GEN DOA		2,0	
AVCO-POLYLEV-ECO			1.5
OLIGOMER STANDARD SOLUTION	10ml	10ml	10ml
PURE WATER	200ml	200ml	200ml
Process :Dyeing at 130 oC x 60 mins → Cool → Filter with Black paper			



### PERFORMANCE

# ACID BUFFER

## AVCO-CID PHS NEW

### Advantages

- ✓ High buffering capacity at pH range of 4-6
- ✓ Non -foaming at all .
- ✓ Liquid product, can be dosed with automatic dosing machines.
- ✓ Non-flammable and non-toxic, with very low irritating effect due to the mild acidity.
- ✓ Non-corrosive to fibers sensitive to mineral acids.
- ✓ Used for neutralization of bleaching and finishing baths.
- ✓ Used in dyeing process, when dyeing polyester, polyamide, wool, to maintain acidic pH at the range of 4.0 -6.0

### PERFORMANCE

#### AVCO-CID PHS NEW

AVCO-CID PHS NEW							
CONCENTRATION (G/L)	0.0	0.1	0.2	0.3	0.4	0.5	1.0
pH	6.8	5.9	5.4	4.9	4.5	4.2	3.8

# SEQUESTERING AGENT

## AVCO-POLYQUEST 1096

### Advantages

- ✓ Good metal ion chelating power and water softening function.
- ✓ To protect the dyes in hard water.
- ✓ To prevent the dyes spots and specks defect caused by condensation of dyes.
- ✓ Good solubility and dispersing power in insoluble calcium, can break down and remove the calcium sediment.
- ✓ Resistant to electrolyte and oxidant.

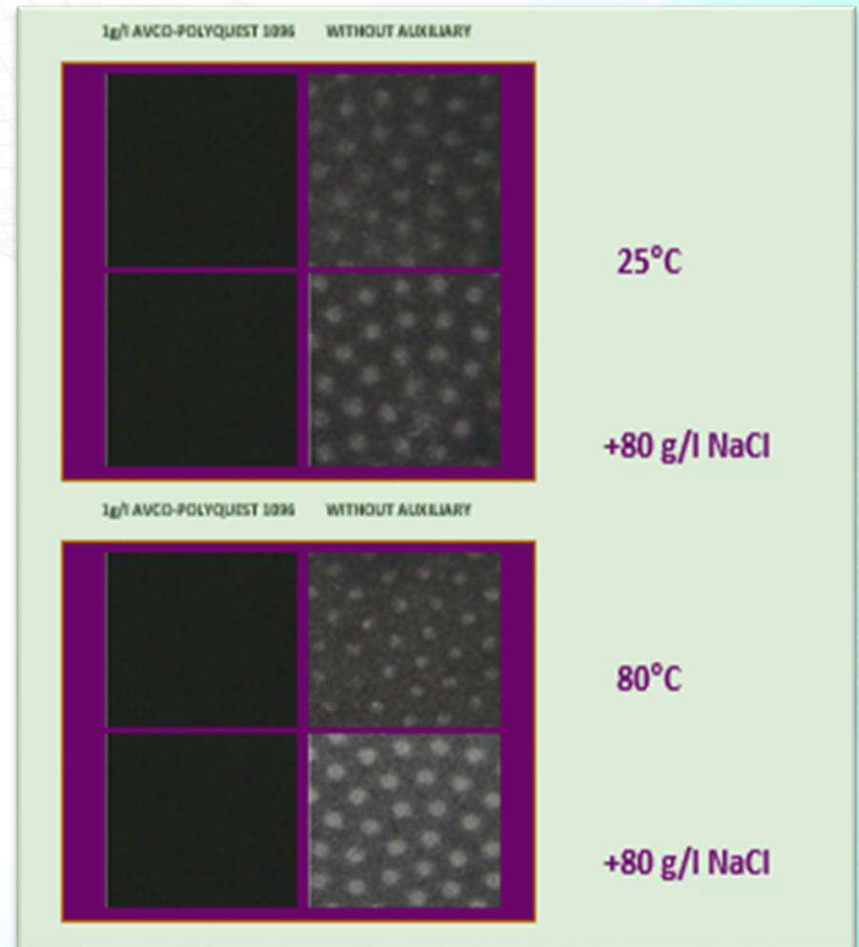
### Characteristic

- ✓ Blend of phosphonate and polycarboxylated polymers.
- ✓ Eco-friendly.

### FILTRATION TEST

The solution contains  
0.5g/l CaCo<sub>3</sub>-pH 11

The filtration is carried out at 25°C  
or 80°C, with salt (80g/l) or without






# SEQUESTERING AGENT

AVCO-POLYQUEST 1096

## PERFORMANCE



a)

b)

c)

Demonstration of the efficiency of AVCO-POLYQUEST 1096 as a scale dispersing agent and as anti-precipitating agent (178 mg/l  $\text{CaCO}_3$ )

a) Beginning of the trial  
b) After 2 minutes  
c) After one hour

Recommended Recipe for dyeing	
Products	Dosage (g/l)
AVCO-Polylev Eco	1.0-2.0
AVCO-Polyquest 1096 ( or without )	0.7-1.0
AVCO-Gen DOA	0.5-1.0
AVCO-Cid PHS New	0.5-1.0
Adjust pH	4.5-5.0



# OLIGOMER DISPERSANT

## AVCO-GEN DOA

### Advantages

- ✓ Prevention of re-deposition on fabric and also the machinery
- ✓ Dispersing action/ clearing action
- ✓ Non-foaming No influence on dyed shades
- ✓ Stability to alkali

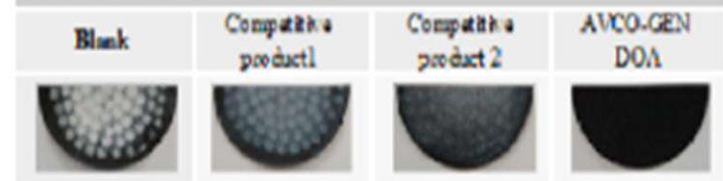
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AVCO-Polylev Eco	1.0-2.0
AVCO-Polvauest 1096 ( or without )	0.7-1.0
AVCO-Gen DOA	0.5-1.0
AVCO-Cid PHS New	0.5-1.0
Adjust pH	4.5-5.0



## PERFORMANCE

PRODUCT	BLANK	TEST1	TEST2	TEST3
Competitive product 1	-	2g/l		
Competitive product 2	-		2g/l	
AVCO-GEN DOA	-			2g/l

### OLIGOMER DISPERSING TEST



# STRIPPING AND LEVELING AGENT

## AVCO-ACCELERATOR PED NEW

### Advantages

- ✓ Excellent migrating power can repair the color spot effectively after dyeing on the polyester fabric. The shade of the fabric is almost the same as before .
- ✓ Suitable for leveling out and brightening off shade polyester dyeing, it is recommended for stripping off disperse dyes from polyester fibers.
- ✓ Little smelling, easy to washing off.
- ✓ An efficient accelerator for polyester dyeing, leveling and stripping.
- ✓ The special active component can decrease the dyes up-take speed and keeps the dyestuff from secondary aggregation during the heating-up stage. It also can accelerate the dyes up-take speed under high temperature. Therefore, AVCO-ACCELERATOR PED NEW can not only improve the levelness, but also raise the color yield.

### PERFORMANCE

Products	Test 1	Test 2	Test 3
Competitor's product		7.0g/l	
AVCO-ACCELERATOR PED NEW			7.0g/l
Adjust pH	4.8	4.8	4.8
Treat at 130oC x 60mins on bunch of colour full PE yarns.			



# SPECIAL MACHINE CLEANER

## AVCO-CLEAN OGM ECO

### Advantages

- ✓ Powerful cleaner of dyeing machine and textiles from Oligomers, greases, oils and waxes.
- ✓ Excellent dispersing the waxes and oligomer deposits which enables the alkali/reducing agent formulation to destroy and dissolve the precipitated dyestuffs and residues stuck to the machine walls.

### PERFORMANCE

Recommended Recipe for Cleaning Machine	
Products	Dosage ( g/l )
<b>AVCO-Clean OGM Eco</b>	<b>2.0 – 5.0</b>
<b>Caustic Soda ( 100%)</b>	<b>2.0 - 6.0</b>
<b>Sodium Hydrosulfite</b>	<b>2.0 – 4.0</b>
<b>Treat at 100oC -130oC x 45mins -60mins</b>	



# ACID REDUCTION CLEARING

## AVCO-CLEAR ARC

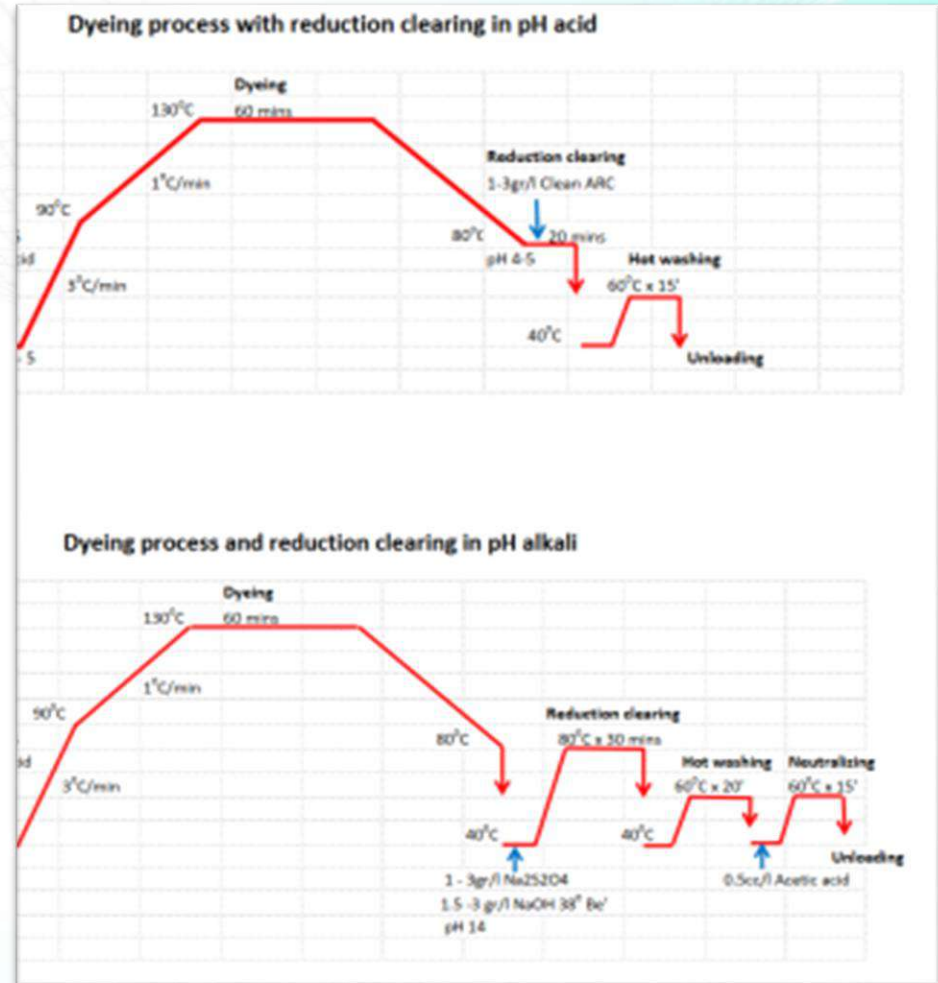
### Advantages

- ✓ After dyeing, the product can be directly added into the dyebath without draining, the processing time can be reduced, and chemical can be saved.
- ✓ The unfixed dyestuff on fiber surface can be completely removed, and the washing effect is comparable to that with Caustic and hydrosulfite.
- ✓ Fastness properties and colour brilliancy of the dye fabric can be enhanced, and the shade is not effected.
- ✓ The dye liquor is lightly acidic after reduction clearing, raising without neutralization can be carried out immediately after finishing process

### Benefits of AVCO-Clear ARC

- ✓ Shorten the dyeing process
- ✓ Cost efficiency
- ✓ Safety handling

### Comparison of AVCO-Clear ARC



# ACID REDUCTION CLEARING

## AVCO-CLEAR ARC

### PERFORMANCE

#### 1. Recipe for Dyeing :

Product	Dosage (g/l)
AVCO-POLYLEV ECO	1.0g/l
DISPERSE RUBINE SE	2.0 %
AVCO-CID PHS NEW	0.5g/l
Adjust pH : 5.0	
Process: Dyeing at 130oC x 45 mins ( LR: 1:10) → Cooling to 85oC add Reduction Clearing agent to maintain 30mins → Drop -> Hot Washing 80oC x 10 mins → drain → Unloading	

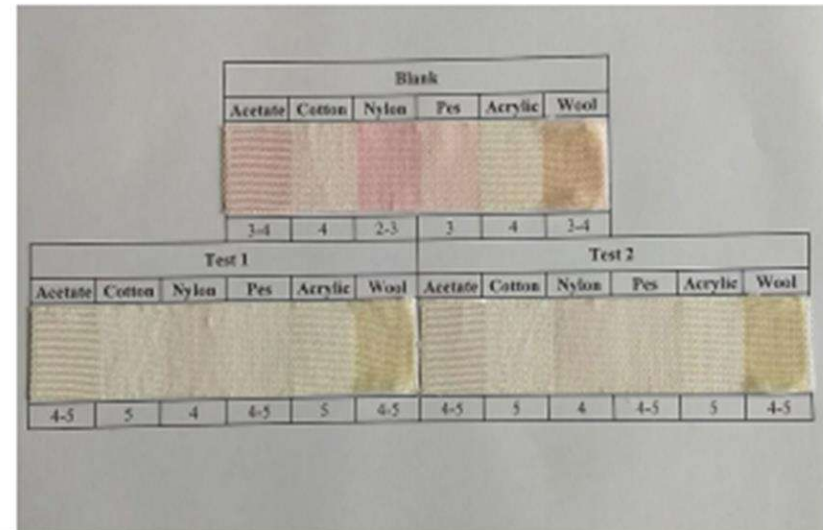
#### 2. Recipe for Acid Reduction Clearing :

Product	Blank	Test 1	Test 2
Competitive Product		3.0 g/l	
AVCO-CLEAR ARC			3.0 g/l

#### 3. Washing Fastness Test – ISO 105 CO3

Chemicals	Concentration
Neutral Soap ECE	5.0g/l
Na2CO3 ( Soda Ash)	2.0g/l
Proceduce	LR 1:50 , Treat at 60oC x 30 mins

#### Solution after test washing fastness



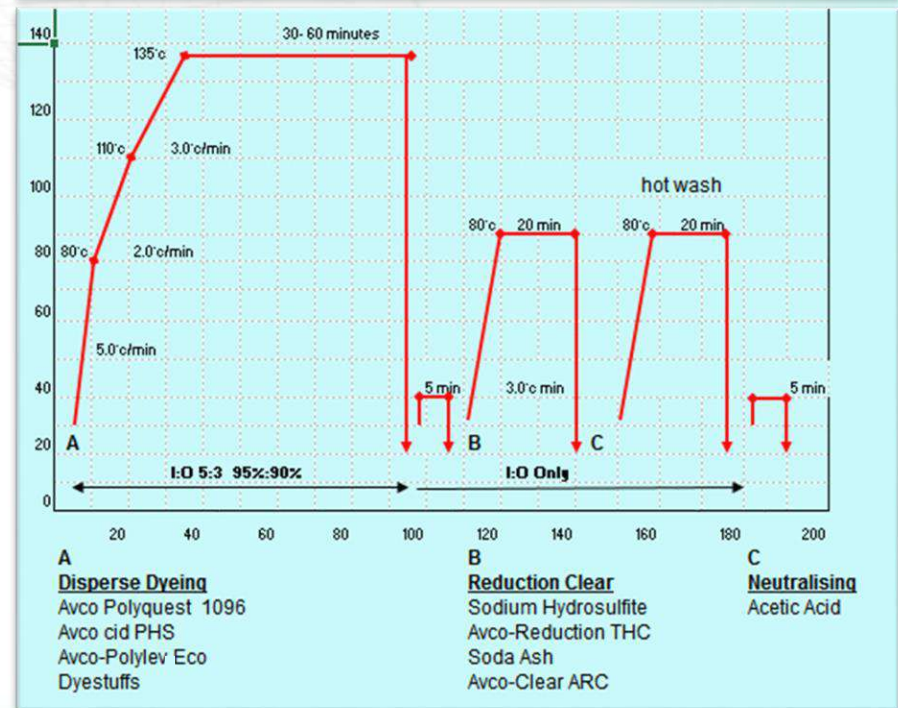
# REDUCTION POWER

## AVCO-REDUCTION THC

### Advantages

- ✓ Stronger reduction power than Hydrosulfite.
- ✓ No Smell as Hydrosulfite, more stable and storage safety than Hydrosulfite.
- ✓ Color stripping agent for all kind of fibers dyed with reactive and direct dyes.
- ✓ Reduction clearing for polyester.
- ✓ Can be use as cleaning agent for dyeing machine.
- ✓ The product removes the unfixed dyes from the fibers surface, and improve the washing and rubbing fastness properties of the dyed textile.
- ✓ For environmental aspect, the waste water of the product is released from sulphur by approx. 75% compared to the use of hydrosulfite and has an extremely low COD-value compared to organic, sulphur-free reduction agents.

Recommended Recipe for Alkali Reduction Clearing	
Product	Dosage ( g/l )
AVCO-REDUCTION THC	1.0-3.0 g/l
NaOH 38oBe	2.0-4.0 cc/l
AVCO-L PET improve fastness to Wetting	0.7 – 1.0 g/l
Process : Treat at 80oC- 85oC x 30 mins	



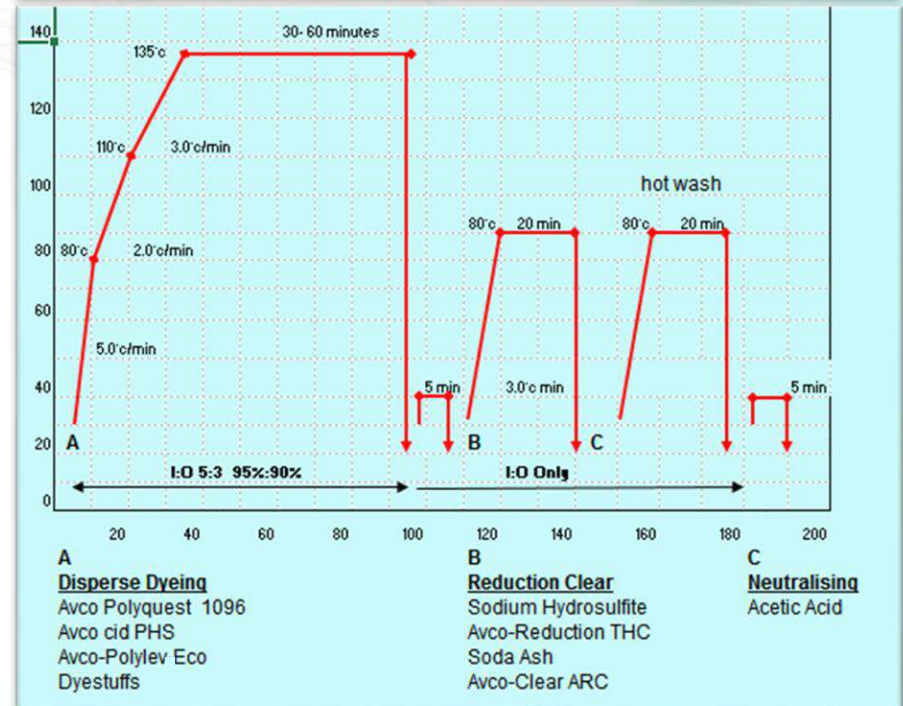
# WASHING AGENT

## AVCO-L PET

### Advantages

- ✓ Enables rapid elimination of synthetic and natural thickeners from the printed fabrics.
- ✓ Removes and suspends unfixed dyes.
- ✓ Keeps unfixed dyes in water dispersion, and prevents staining of white and colored grounds of the printed fabrics.
- ✓ Keeps white areas clean and bright.
- ✓ Assures clear and bright shades, with better crock and wash fastness.
- ✓ While printing polyester blends with cellulosic fibres, the product keeps disperse dyes from staining the cellulosic part.
- ✓ Low foaming detergent.
- ✓ Liquid product which can be dosed easily.

Recommended Recipe for Alkali Reduction Clearing	
Product	Dosage ( g/l )
AVCO-REDUCTION THC	1.0-3.0 g/l
NaOH 38oBe	2.0-4.0 cc/l
AVCO-L PET improve fastness to Wetting	0.7 – 1.0 g/l
<b>Process : Treat at 80oC- 85oC x 30 mins</b>	





# LOW FOAMING OIL REMOVAL

## AVCO-BIOSOL 1040

### Advantages

- ✓ Excellent dispersion and emulsion properties.
- ✓ Oil removing effect, can be used in a wide range of pH.
- ✓ Nonionic, low foaming surfactant, suitable for high speed machine.
- ✓ Used in neutral medium, mild alkali or mild acid solutions.
- ✓ Environment friendly, regarded as a "GREEN" product.



### Properties

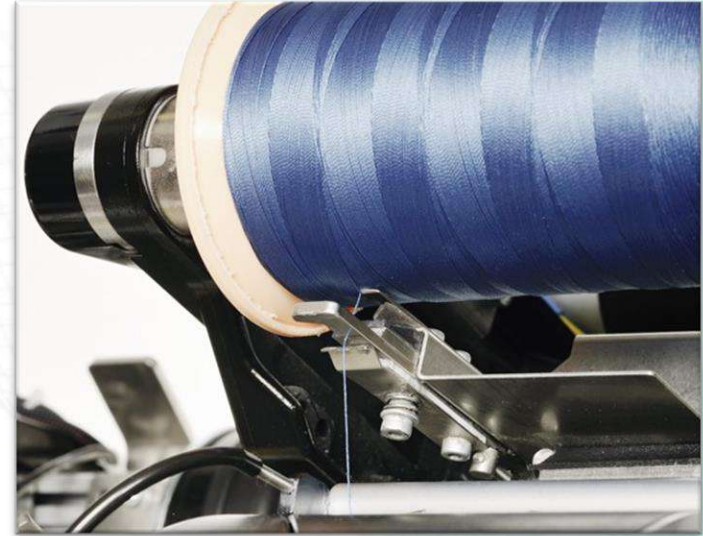
- ✓ Blends of surfactants
- ✓ Clear, yellow liquid
- ✓ Non-ionic
- ✓ Miscible with water at any ratio
- ✓ Compatible with hard water, mild acidic, mild alkali

# SEWING THREAD LUBRICANT FOR LICK ROLL

AVCO-SEW HM /AVCO-LUBROSIL MTL

## Advantages

- ✓ Good head protection and needle cooling during sewing.
- ✓ Reduces fiber/metal and fiber/fiber coefficient of friction.
- ✓ The gliding properties of treated sewing yarns are distinctly improved.
- ✓ Sewing speed can be fastened with no problems of too much heating up of the sewing needles during the sewing process.
- ✓ Does not effect dyeing fastness.
- ✓ Non yellowing finish.
- ✓ Applied in the hot lick roll and dosing pump systems.



The background features a light blue to cyan gradient. On the right, there is a large, stylized, semi-transparent green letter 'A' with a grid pattern. A series of thin, blue, wavy lines flow across the top and right side of the image. In the bottom right corner, there is a pattern of small white dots on a cyan background.

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