

# **DYEING PROCESS FOR POLYESTER SEWING THREAD**

AVCO-AUXILIARIES  
FOR POLYESTER SEWING THREAD



# DYEING AUXILIARIES FOR POLYESTER

PRODUCT	USE	CHEMISTRY	IONICITY	DOSAGE
AVCO-POLYLEV ECO	Levelling Agent	Blend of Nonionic surfactant and anionic polyester polymer	Nonionic/Anionic	1.0 g/l – 3.0 g/l
AVCO-LEV DLX	Levelling Agent	Blend of nonionic and anionic surface active agent	Nonionic/Anionic	1.0 g/l – 3.0 g/l
AVCO-CID PHS NEW	Acid Buffer	Blend of carboxylated organic acids, buffer salt	Anionic	1.0 g/l – 2.0 g/l
ACVO-CID PES-N	Acid Buffer with complexing and dispersing properties	Blend of carboxylated organic acids, buffer salt, dispersing and complexing agent	Anionic	1.0 g/l – 2.0 g/l
AVCO-POLYQUEST 1096	Sequestering Agent	Blend of phosphonate and polycarboxylated polymer	Anionic	0.7 g/l - 1.0 g/l
AVCO-GEN DOA	Oligomer Dispersant	Compound of polymers and anionic surfactants	Anionic	0.5 g/l – 1.0 g/l
AVCO-ACCELERATOR PED NEW	Stripping and Levelling Agent	Compound of eco friendly organic esters with anionic and non-ionic emulsifiers	Anionic / nonionic	1.0 g/l – 7.0 g/l
AVCO-MIGRATOR EXCEL	Stripping and Levelling Agent	Compound of organic esters with anionic and non-ionic emulsifiers and dispersing additives	Anionic / nonionic	1.0 g/l – 7.0 g/l
AVCO-CLEAN OGM	Machine Cleaner	Combination of free APEO surfactants and ammonium quats	Cationic/Nonionic	1.0 g/l – 3.0 g/l

# DYEING AUXILIARIES FOR POLYESTER

PRODUCT	USE	CHEMISTRY	IONICITY	DOSAGE
AVCO-CLEAR ARC	Acid Reduction Clearing Agent	Aqueous solution sodium formaldehyde sulfoxylate	Anionic	1.0 g/l – 4.0 g/l
AVCO-BIOCLEAR GLR	Alkaline reductive agent	Compound of eco-friendly polyhydroxy-glucoside and dispersing agents in aqueous solution	Nonionic/Anionic	2.0 g/l – 4.0 g/l
AVCO-REDUCTION THC	Alkali Reduction Clearing Agent	Thiourea dioxide	Anionic	1.0 g/l – 3.0 g/l
AVCO-SILICONE 1000	Lubricant / Winding thread at room temperature	PDMS with viscosity 1000 cps	Nonionic	1-7%
AVCO-SEW HM	Lubricant / Winding thread, melting at 80-90°C	Compound of silicone oil, wax and additives	Nonionic	1-7%
AVCO-LUBROSIL MTL	Lubricant / Winding thread, melting at 60-70°C	Compound of silicone oil, wax and additives	Nonionic	1-7%
AVCO-LUBROSIL CLR	Lubricant / Winding thread, working at room temperature	Compound of silicone oil, wax and additives	Nonionic	1-7%

# LOW FOAMING LEVELLING AND DISPERSING AGENT

## AVCO-POLYLEV ECO

### CHEMISTRY

Blend of Nonionic surfactant and anionic polyester polymer

### IONICITY

Nonionic/Anionic

### DOSAGE

1 – 3 g/l

### 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

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				



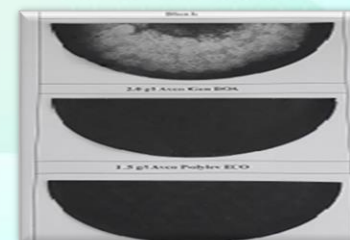
### DISPERSING DYESTUFF

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				



### OLIGOMER DIPERSANT

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

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# LOW FOAMING LEVELING AGENT

AVCO-LEV DLX

## CHEMISTRY

Blend of nonionic and anionic surface active agent

## IONICITY

Nonionic/Anionic

## DOSAGE

1 – 3 g/l

## ADVANTAGES

- ✓ Highly effective dispersing properties towards disperse dyes.
- ✓ Very good levelling properties and very suitable for beam and package dyeing process .
- ✓ Has no retarding effect, resulting in a very good color yield.
- ✓ Shorten dyeing time, even heating speed is 4° C/ min, dyeing result are very even and leveled.
- ✓ Levelness in tri-chromine or other dye combinations is excellent.
- ✓ Improve the stability of disperse dye liquors.

# ACID BUFFER WITH COMPLEXING AND DISPERSING PROPERTIES

AVCO-CID PES N

## CHEMISTRY

Blend of carboxylated organic acids, buffer salt, dispersing and complexing agent

## IONICITY

Anionic

## DOSAGE

1 - 2 g/l

## ADVANTAGES

- ✓ High buffering capacity at pH range of 4-6
- ✓ Non -foaming at all .
- ✓ Highly complexing toward Iron and Copper ions
- ✓ Good complexing of Calcium and Magnesium.
- ✓ Does not complex metal ion included in the dyestuff molecules, so use of AVCO-CID PES-N eliminates shade change when dyeing .
- ✓ The complexing and dispersing properties of AVCO-CID PES-N are effective in both acid and alkaline range.

# ACID BUFFER WITH COMPLEXING AND DISPERSING PROPERTIES

## AVCO-CID PHS NEW

### CHEMISTRY

Blend of carboxylated organic acids, buffer salt.

### IONICITY

Anionic

### DOSAGE

1 - 2 g/l

### 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							
CONCENTRATION (G/L)	0.0	0.2	0.5	0.7	1.0	1.5	2.0
pH	6.8	4.9	4.9	4.9	4.8	4.7	4.63

# SEQUESTERING AGENT

## AVCO-POLYQUEST 1096

### CHEMISTRY

Blend of phosphonate and polycarboxylated polymer

### IONICITY

Anionic

### DOSAGE

1 - 2 g/l

### 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.

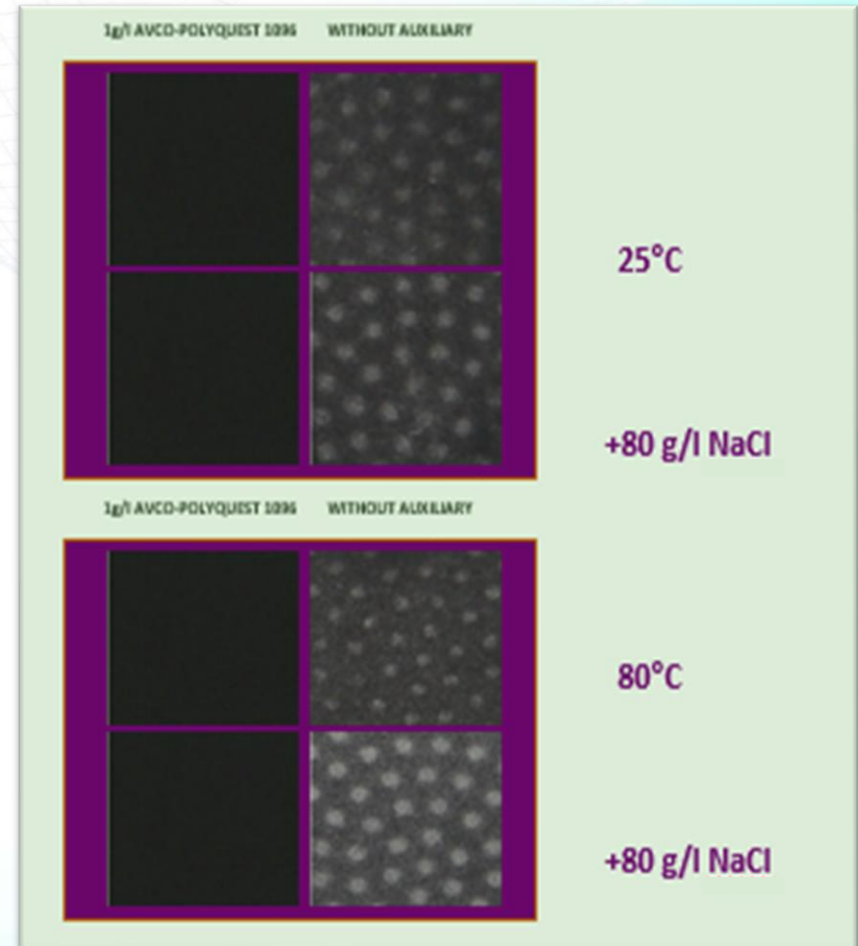
### Characteristic

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

### FILTRATION TEST

The solution contains 0.5g/l  $\text{CaCO}_3$ -pH 11

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





# SEQUESTERING AGENT


AVCO-POLYQUEST 1096

## ADVANTAGES

**AVCO-POLYQUEST 1096**      **WITHOUT AVCO-POLYQUEST 1096**

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

## CHEMISTRY

Compound of polymer and anionic surfactant.

## IONICITY

Anionic

## DOSAGE

1 - 2 g/l

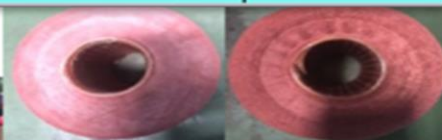
## ADVANTAGES

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

## Recommended Recipe for dyeing

Products	Dosage (g/l)
AVCO-Polylev Eco	1.0-2.0
AVCO-Polvaquest 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 cheeses** →



↑  
**Non-oligomer cheese**

## PERFORMANCE

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

## OLIGOMER DISPERSING TEST



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# STRIPPING AND LEVELING AGENT

## AVCO-MIGRATOR EXCEL

### CHEMISTRY

Compound of organic esters with anionic and non-ionic emulsifiers and dispersing additives

### IONICITY

Anionic / Nonionic

### DOSAGE

1 - 7 g/l

### ADVANTAGES

- ✓ High levelling and migrating performance when dyeing at boil and HT conditions.
- ✓ 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.
- ✓ Nontoxic, non volatile with low odor.
- ✓ An efficient accelerator for polyester dyeing, leveling and stripping.

# STRIPPING AND LEVELING AGENT

## AVCO-ACCELERATOR PED NEW

### CHEMISTRY

Compound of eco-friendly organic esters with anionic and non-ionic emulsifiers

### IONICITY

Anionic / Nonionic

### DOSAGE

1 - 7 g/l

### 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.

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.			



### PERFORMANCE

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# SPECIAL MACHINE CLEANER

AVCO-CLEAN OGM

## CHEMISTRY

Combination of free APEO surfactants and ammonium quats.

## IONICITY

Nonionic / Cationic

## DOSAGE

1 - 3 g/l

## 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.



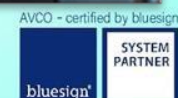
## PERFORMANCE

### Recommended Recipe for Cleaning Machine

Products	Dosage ( g/l )
<b>AVCO-Clean OGM</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>	



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# ALKALINE REDUCTION CLEARING

AVCO-BIOCLEAR GLR

## CHEMISTRY

Compound of eco-friendly polyhydroxy-glucoside and dispersing agents in aqueous solution

## IONICITY

Nonionic / Anionic

## DOSAGE

2 - 4 g/l

## ADVANTAGES

- ✓ Bio-degradable and non hazardous alkaline reductive agent, highly recommend to replace sodium hydrosulfite in reduction clearing for polyester.
- ✓ Good washing and rubbing fastness result as sodium hydrosulfite.
- ✓ Help to keep cellulose fibers unstained when dyeing blends of polyester with cellulose fibers.
- ✓ Contain a special protective additive which prevents the re-deposition of the loose dyestuffs.
- ✓ Non foaming product.



# ACID REDUCTION CLEARING

## AVCO-CLEAR ARC

### CHEMISTRY

Aqueous solution of sodium formaldehyde sulfoxylate

### IONICITY

Anionic

### DOSAGE

1 - 4 g/l

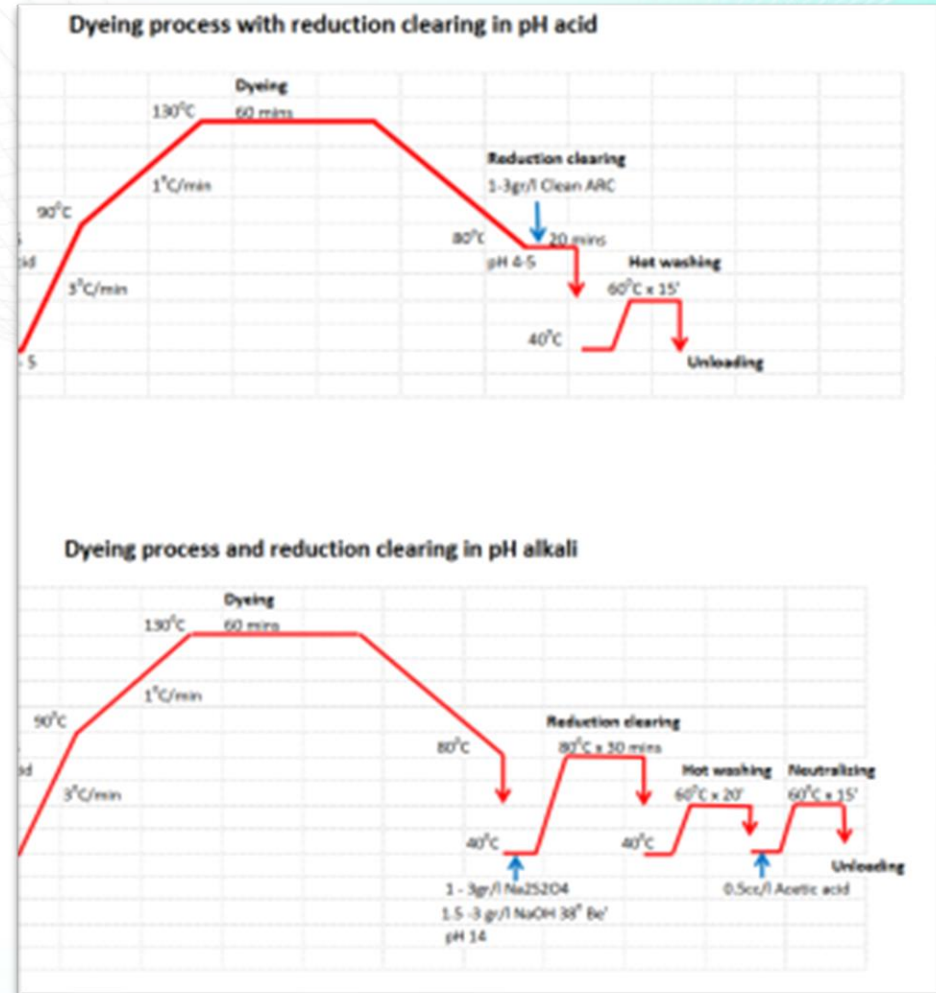
### ADVANTAGES

- ✓ 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

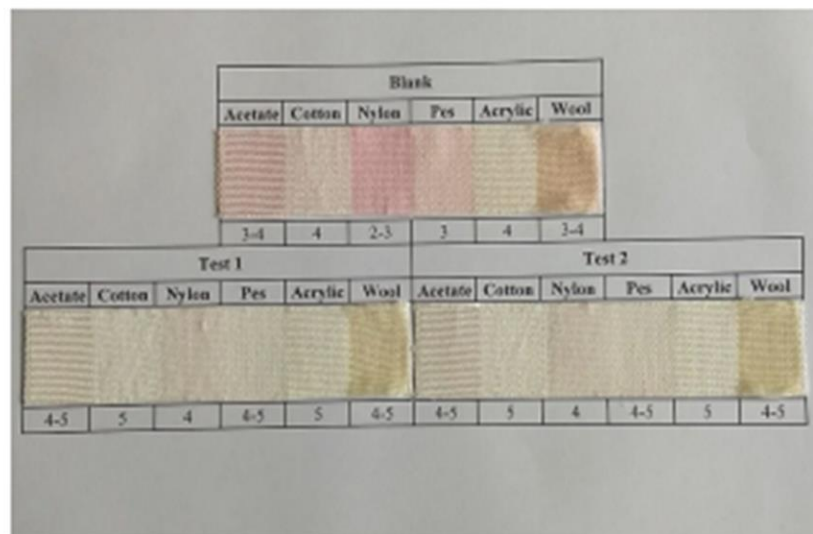
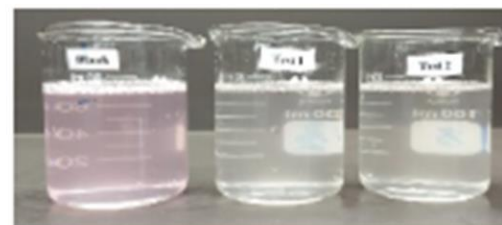
#### 2. Recipe for Acid Reduction Clearing :

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 C03

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



# SEWING THREAD LUBRICANT FOR LICK ROLL

AVCO-SEW HM /AVCO-LUBROSIL MTL

## CHEMISTRY

Blend of silicon oil, waxes and additives

## IONICITY

Nonionic

## DOSAGE

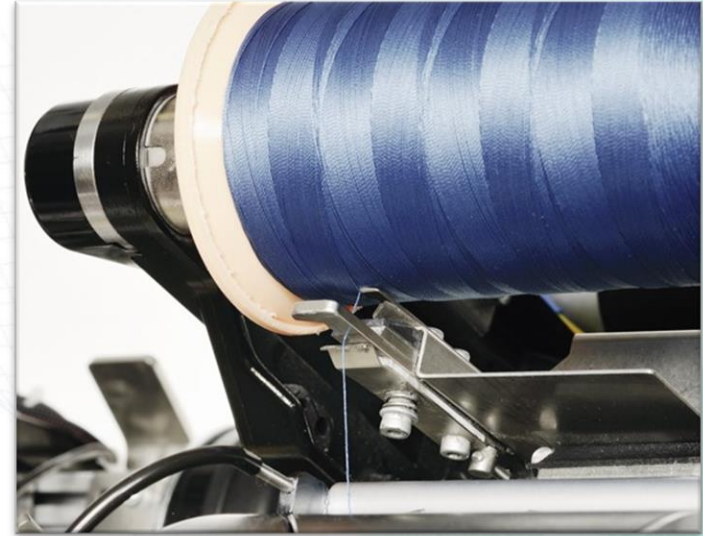
1 – 7 %

## 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.

## WORKING TEMPERATURE

- ✓ AVCO-LUBROSIL HM : 80 – 90oC
- ✓ AVCO-LUBROSIL MTL: 60 – 70oC



# SEWING THREAD LUBRICANT FOR LICK ROLL

## AVCO-LUBROSIL CLR

### CHEMISTRY

Blend of silicon oil, paraffine waxes and additives

### IONICITY

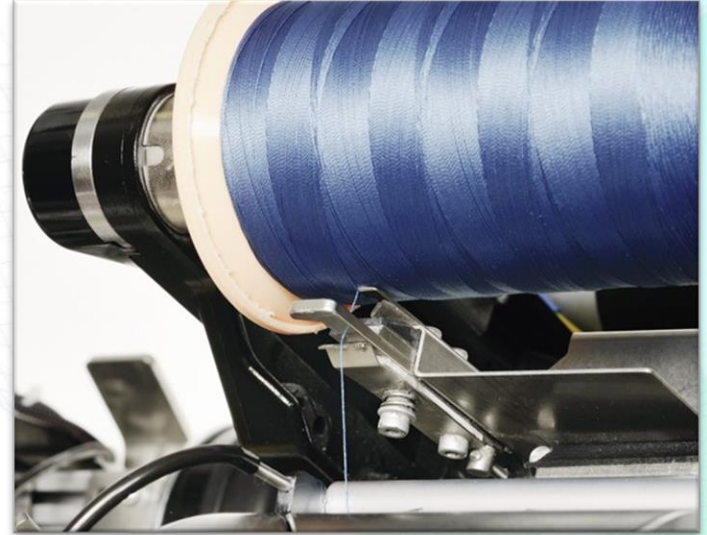
Nonionic

### DOSAGE

1 – 7 %

### ADVANTAGES

- ✓ Application is done at room temperature
- ✓ Has outstanding smoothing properties, and it imparts to the sewing yarns excellent gliding properties along with very good protection against heat.
- ✓ Good head protection and needle cooling during sewing.
- ✓ Reduces fiber/metal and fiber/fiber coefficient of friction.
- ✓ AVCO-LUBROSIL CLR is not sensitive to temperature changes, and has a constant flow during application, especially at lower temperatures.
- ✓ Does not affect dyeing fastness.
- ✓ Non yellowing finish.
- ✓ Can be applied in the hot lick roll and dosing pump systems.



The background features a large, stylized, light green 'A' shape on the right side. Overlaid on this and the rest of the page are several sets of thin, wavy, blue and green lines that create a sense of motion and depth. The overall color palette is a mix of light blue, teal, and white.

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