

# AVCO-CLEAR CHI

## SYNTHETIC THICKENER FOR TEXTILE PIGMENT PRINTING

AVCO-CLEAR CHI is a synthetic thickener for preparation of semi - emulsion and all aqueous pigment printing pastes.

### SPECIFICATIONS:

<b>Appearance</b>	Slightly viscous yellowish liquid.
<b>Chemical nature</b>	Neutralized carboxylated copolymer aqueous dispersion with special additives, and high boiling point solvent.
<b>Ionicity</b>	Anionic
<b>pH (1% dispersion)</b>	7.5 ± 1
<b>Solubility</b>	Dispersible in water with a high speed mixer to a thick paste at concentration of 1-2%.
<b>Compatibility</b>	a. Compatible with nonionic and anionic products used in pigment printing. b. Do not mix with strong acids, strong alkalis, cationic products and with divalent and trivalent metallic salts.
<b>Storage</b>	a. During long storage slight separation of solvent layer on top of drum may occur. Stirring with a rod before usage is advisable. b. Protect from frost. Do not store in direct sun and in hot places. c. When properly stored, stable for at least 12 months.

### PROPERTIES & USES:

1. Suitable for flat screens and for rotary screen-printing processes.
2. Suitable for all aqueous and for oil-in-water printing pastes.
3. Does not impair brilliance of pigments.
4. Does not impair the hand of printed fabrics.

## Technical – Information

5. Very good coverage and levelness of printed area.
6. When using AVCO-CLEAR CHI it is not necessary to add to the print paste an Acid catalyst. After drying the active matter of the thickener acts as an acidic catalyst.
7. Reproduction is very good.
8. Printing paste preparation is very easy and very rapid.
9. AVCO-CLEAR CHI does not block pumps, pipes and screen of printing machines.
10. During paste preparation and printing process AVCO-CLEAR CHI does not release hazardous vapours of solvent to the environment.

### APPLICATION:

1. Printing paste preparation:

The following is a typical formulation:

	SOLVENT FREE	LOW SOLVENT CONTENT
Water	adjust to 1000	Adjust to 1000
AVCO-CLEAR CHI	20 – 25	18 – 22
AVCO ANTIFOAM NS-100	0 – 5	0 – 3
AVCO-PRINT JN	4 – 15	2 – 10
WHITE SPIRIT		100 – 300
AVCO-BINDER SPC	80 – 200	80 – 200
AVCO-PRINTOSIL EM	0 – 10	0 – 10
AVCO-PRINTFIX LQ	0 – 10	0 – 10
AVCO PIGMENTS	X	X

All quantities are in g/Kg paste.

### PREPARATION METHOD:

The thickener is added to the water, and homogenized with an high speed (1500-3000 r.p.m.) homogenizer mixer for 10 minutes.

Add all other ingredients in the same order as in the recipe above.

pH of the final paste should be 7-8. If the pH is lower adjust it by adding ammonia solution.

The final viscosity for solvent free paste should be 70-90 dPa.S, for white spirit emulsions viscosity can be lowered to 60-70 dPa.S (Haake viscometer VT-02).

**REMARKS:**

1. When preparing a solvent containing paste, the white spirit should be added in small portions in order to get an homogeneous paste,
2. Add all ingredients in the same order as in the recipe above.
3. The required viscosity depends upon the printing machine type, type of fabric and the print design.
4. If viscosity of the paste is too high, viscosity can be reduced with electrolytes such as ammonium salts.
5. If viscosity of the paste is too low adjust it by adding more AVCO-CLEAR CHI and continue mixing for additional 4-6 minutes.
6. If printing paste has to be stored for prolonged times add 1-2 gr/kg of a preserving agent (AVCOGARD PR).
7. Prepare printing paste with softened water. If the water is hard, it is advisable to use a non-alkaline sequestering agent (AVCO-POLYQUEST KAL). Viscosity of paste may be impaired, and higher quantities of thickener are needed.
8. The printing paste is sensitive to electrolytes. When adding electrolytes to the paste, amount of thickener should be increased to receive the desired viscosity.
9. AVCO-PRINT JN is a co-thickener and emulsifier used to overcome bleeding problems, and to obtain sharper border designs when printing on difficult substrate, and when printing with problematic pigments such as blacks.
10. AVCO-PRINTOSIL EM is a silicone softener used to improve flexibility of the binder film.
11. AVCO-PRINTFIX LQ is a cross linking agent, used to improve wash fastness and wet rubbing fastness.