

## Hydro Chromic White C-1224

### 1. Summary

Hydro Chromic White C-1224 is a water-based binder which to be used in Screen Printing onto cotton, polyester, nylon, other blended fabric or nonwoven fabric. The printed design with this product changes its color repeatedly from white to transparent when wetted with water and changes back to the original white when dried.

Therefore, having some image underneath and over-printing Hydro Chromic White on top, you may have a special effect that hides the image with white when dried and shows the image when wetted.

Also, the coating is soft to the touch and excellent in water resistant and rubbing strength so that the binder is suitable for toys such as a diaper of baby doll.

Further, you may add Neo Color (our pigment color) into the binder to obtain reversible color change from colored opaque to colored transparent with water, which can increase the hiding power of the preprinted design.

### 2. Characteristic

Appearance:	White paste
Component:	A mixture of acrylic resin, white pigment and water etc.
Viscosity:	30,000-40,000mPa · s (BH Type viscometer at 25°C)
pH:	9.5 ± 0.5
Specific gravity:	1.06 ± 0.05g/cm <sup>3</sup>
Ionicity:	mildly anionic

### 3. Usage

(Standard recipe)	Hydro Chromic White C-1224	100	100
	Fixer F	2	2
	Neo Color	-	~1
	Total	102	103

#### \* Adjustment of the ink viscosity

For increasing the viscosity, add Emacol R600E (within 0.5%).

For decreasing the viscosity, add a small amount of water (within 5%).

Please note that a stirring machine should be used for increasing the viscosity.

\* Fixer F should be added into the binder. The paste should be used up within 8 hours. Please do not use the paste after 8 hours or its fastness becomes weak.

\* Please do not add too much amount of Neo Color or the color change property becomes dull. Please check appropriate additive amount before actual use.

#### (Process)

Screen print with 70-120mesh→Dry→Baking 140°C x 3-5min.

#### (Screen Plate)

Polyester mono-filament 80-120mesh bias should be used for a screen plate. The tension should be set high.

Emulsion for water-resistance or water & oil-resistance should be used as photosensitive film. Strengthen the screen if necessary.

#### (Printing Operation)

The ink has lower hiding power compared to general white ink, therefore softer squeegee (hardness: 55 – 65° ) should be used and the printed layer should be as thick as possible. In case the hiding power is not sufficient enough with one layer, printing should be done again. However, excess printing layers cannot obtain enough transparency when wetted with water. In case the ink viscosity increases after a long time printing operation, please add fresh ink or a small amount of water.

#### (Cleaning of a screen plate)

After printing, clean a screen plate immediately with water or soapsuds. When 'clogging' is generated on the screen plate due to a long time printing operation or drying, butyl acetate, xylol, etc. should be used to wipe it off. Please note that wipe-off with solvent might damage the screen.

#### (Dry & heat treatment)

After printing, sufficient dry and heat treatment should be needed. Insufficient heat treatment may cause poor fastness.

#### 4. Note

- ① The fastness of Hydro Chromic White C-1224 will differ depending on kinds of fabric. Please do pre-test before use. The binder is not suitable for water-repellent fabric since it doesn't adhere to it.

Due to its poor elasticity, the binder is not suitable for stretchable knit (tricot, etc.).

- ② This product is designed for avoiding ring stains (stains caused by a touch of water). However, slight stain might be seen on the area where water contacts. The ring stain might be more remarkable when the binder contacts a lot of water.

- ③ For storage, seal tight and avoid freeze. Store in a dark place below 30°C, away from direct sunlight.

Shelf life: For 6 months below 30°C

- ④ After a long time storage, the viscosity might decrease or the ink might settle out. In that case, please stir well before use.