PRODUCT DATA SHEET

UVI-Polycure 74 series UV Screen Printing Ink

December 2009

General Information:
UVI-Polycure 74 series UV screen printing inks have been engineered to meet the specific requirements of screen printers for printing a variety of polypropylene work including corflute, plasnet & Yuppo substrates.

Product Range & Codes:

74 -187	Extender
74 – Y114	NT Yellow
74 - S123	Orange
74 – U22180	Scarlet 485 Red
74 - R100	Red
74 - M100	Magenta
74 - V100	Violet
74 – U22182	Reflex Blue
74 - B100	Blue
74 - G100	Green
74 - K100	Black
74 - W100	White
74 – K300	Super Dense Black
74 – W200	Super Opaque White
74 - Y200	Process Yellow
74 - M200	Process Magenta
74 - B200	Process Cyan
74 - K200	Process Black
74 - 500	Reducer

Container Size:
74 series UVI-Polycure is available in 5kg pack size.

Availability:
Discuss availability with your local DIC facility.
Standard Colours above ex works.
Special blends are made to order.

Properties:
74 series UVI-Polycure inks contain 100% UV solids. These inks do not contain solvents or water or any toxic materials. These inks are designed for screen printing onto select substrates through a specific range of mesh and cured with high UV energy.
74 series UVI-Polycure inks offer a robust film formed after sufficient UV curing and cross linking has occurred. Typical of all UV screen printing inks complete cross linking is a combination of ink deposit, cure energy and time and all 3 factors will contribute towards final printed results.

Viscosity:
74 series UVI-Polycure inks are supplied press ready. However if thinning is required we recommend a maximum addition of 5% 74-500 Reducer by weight.

Coverage:
Approximately 75 - 90 square metres per kg through 150/31 mesh. However many variables such as squeegee, stencil, substrate and print conditions may influence coverage.
Substrate conditions will impact coverage, particularly porous substrates where ink penetrates into the substrate surface.

Substrates:
74 series UVI-Polycure inks have been tested onto a range of treated Polypropylene flat sheet substrates. Typical polypropylene substrates include Corflute, UV Yuppo, Plasnet & Aquatech. You should note that polypropylene substrates have varying surface tension readings which can differ from supplier to supplier, sheet to sheet and on each side of the same sheet. Substrates should be tested for surface tension before printing to ensure that it meets manufacturer's specification.

Untreated polymer plastics have a surface tension of 30 dynes/cm. **Well treated polymer plastics should have a value for printing of 38-42 dynes/cm.** If the level is higher than 42 and if the film has undergone two-sided treatment, the high treatment level can also cause the printed film to lift. Polymer plastics with a surface tension less than 37 have binding problems.

To eliminate the uncertainty of the surface treatment onto **rigid** Polypropylene we strongly advise to add 3-5% of ST373 (adhesion promoter) into the ink. This will ensure film deposit bonds very well to rigid PP and enhance your water resistance. Once added the inks will remain usable for 12-16 hours and then the ink need to be discarded. Best way to minimise waste is to mix small amounts of inks as you require.

Please note that UVI-Polycure should be thoroughly pre-tested before use on PVC in any format, rigid, electrostatic, banner types or self adhesive.

Adhesion to substrate is only one aspect of absolute quality print performance and we strongly advise that all tests be fully appreciative of print, cure, adhesion, post print and end use criteria requirements.

We therefore insist that you conduct your own complete evaluation to determine suitability.

DECLARATION: The information contained in this document is general in nature only and is compiled from knowledge gained in the laboratory and or commercial field experience. As printing and commercial field conditions can vary considerably from customer to customer, we recommend that each customer satisfy themselves by adequate product testing that the product is fit for complete purpose including end use application prior to commencement of commercial production print runs. DIC products are not designed for use in conjunction with products of any other supplier unless agreed in writing.

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Adhesion:
Full adhesion of UVI-Polycure will only be realised after post curing process is complete. This will usually take 12-24 hours and will depend upon temperature and the amount of UV energy provided to the ink film.
Initial adhesion within the first 3 hours will be satisfactory and over the ensuing period adhesion will improve as the cross linking process becomes complete.

UV Curing:
There are many variables related to curing UV ink systems, and curing has a direct relationship to adhesion. To manage ink deposit and for best results we recommend using; 150/31 mesh, 2 + 2 coats Chromaline Emulsion, 75/95/75 Triple Durometer Polipren squeegee. We recommend that UVI-Polycure is subjected to 75-80mJ/cm UV energy and is cured at a belt speed of 25mt/hr to obtain optimum cure.

Screen Stability:
UVI-Polycure inks have excellent screen stability and will not thicken or gel in the screen therefore maintaining accurate colour strength throughout the print run. Inks should not be exposed to UV light during printing as this may affect ink properties.

Stencil:
For best results use dual cure emulsion Saati HS or HU with a 2 + 2 coating technique. These emulsions contain high resin solids of 35% and offer very good resolution. The higher viscosity UDC HV emulsion will assist in improving dot reproduction for half tone printing and is most suitable for 140 – 180 mesh counts.

Squeegee:
For best results use a triple durometer 75/95/75 squeegee. These types will apply a thinner film weight and improve print quality.

Wash up:
UVI-Polycure inks wash up well with PROWASH or any of the GR series screenwashes. PROWASH has a very slow evaporation rate and high solvency which will clean up all ink residues and reduce ink staining in the mesh. PROWASH is very low in odour, is non flammable and non combustible.

Post Print:
Polypropylene comes in various forms, ranging from thin sheet carrying trade names such as Yuppo, Plasnet, Nanya & Aquateck, as well as the commonly used Corflute sheet which is a very different form of Polypropylene. These substrates have a tendency to carry very high heat retention and as such needs to be managed well. UVI-Polycure has been tested under the conditions within this product data sheet. We recommend you follow all of these recommendations to ensure that all post print requirements are met.

Light fastness:

UVI-Polycure standard colours will provide vibrant printed images for approximately 2 years when printed at full strength and through recommended mesh counts onto recommended substrates. During this time, particularly during the latter 12 months we would expect to see some deterioration of the finished print in comparison to the original print.

Storage:
UV Inks should always be stored in constant temperature conditions of between 18-24 degrees C where the environment is clean, dust free and without direct or indirect UV light. Inks should always be stored in tightly sealed UV resistant containers and carry labels stating specific contents.

Shelf Life:
For optimum performance UV Inks should be used within 12 months from the date of manufacture. UV Inks may perform perfectly well after 12 months however tests should be done to determine that ink is still fit for purpose.

Intermixing:
We do not recommend that UVI-Polycure be blended with any other UV inks or products not within the UVI-Polycure range.

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