

IcoPrint Flex UNHF

Low Halogen inks for flexible applications

Issue No. 008/2019

IcoPrint FLEX UNHF Four Colour Process Ink is a satin finish ink, specifically designed to overcome embrittlement and shattering problems associated with printing of thin gauge plastics. **IcoPrint Flex UNHF** is suitable for self-adhesive PVC, thin gauge semi rigid vinyls, vinyl banners and 100 micron fleet transfer vinyls

Curing of Inks

Actual curing rates depend on a number of factors, including ink film thickness, opacity, the number and types of lamps used (including lamp emission spectrum, power and efficiency) and the stock being printed. Care should be taken to ensure that each colour is cured correctly to achieve optimum adhesion to substrate and overprint adhesion of subsequent colours.

Post Cure Conditions

The chemical reactions involved in curing UV Inks are not totally completed in the curing unit itself. While up to 90% of the chemical bonds needed to give adhesion etc, are completed during initial cure, there is a post cure period where chemical bonds continue to be made.

Studies show that although much of the post cure activity does take place within 24 hours it is now thought the post cure period can last for a few weeks. This reaction can adversely affect inter-coat adhesion and flexibility.

This is important to recognise as the UV curing process, and post curing, can cause shrinkage of the ink film, which puts stress on the material. In the case of self-adhesive PVC the stress manifests itself as cracking or shattering (embrittlement) of the substrate.

It is important to be cautious if your results immediately after curing are marginal for embrittlement as the additional post cure stress may cause more serious problems later on.

Care should be taken that prints are not over-cured - adhesion of subsequent colours, as well as the first colour, should be assessed at regular intervals.

Pre Production Test Requirements

Certain plastics may be impregnated with lubricants which, like plasticiser migration, may impair adhesion even a considerable period after printing. This can usually be overcome by wiping the surface with white spirit before printing.

Some plastics can become brittle when printed, possibly to the point of shattering, often after several weeks. It is essential to check compatibility between ink and plastic to guard against this

Main Characteristics

Properties

- Excellent Flexibility, low embrittlement of printed materials
- Excellent Print Definition
- Developed for self-adhesive and flexible PVC materials
- Unlimited screen stability
- Excellent Adhesion to PVC and common plastics
- Up to 12 months external weathering durability
- Low Halogen levels to meet EU requirements

Curing

Ensure sufficient through cure – recommend using a double lamp system with at least 200mJ/cm² power.

Thinning

Inks are supplied press ready

Small amounts (1-5%) of flexible UV thinner can be added.

Wash-up

Screens can be cleaned with **ZTC639** Thinner

Mesh

150.34 PW is recommended for general use.

Although 140.34 or similar may be used; coarser meshes may impair cure, adhesion and anti-embrittlement properties.

Stencil Type

Most direct stencil emulsion materials designed for UV inks are suitable.

Recommended:

Emulsion **Dirasol 22**, **Dirasol 32** and **Dirasol 915**

Coverage & Mesh No.

No. 150.34 PW Mesh. 80-90 m²/kg

Co-use with other inks

We do not recommend using this product with other ink systems

IMPORTANT: Stir well before every use. Always test application fully before beginning production run as there is often considerable variance in substrates from different manufacturers and even between different batches.

IcoPrint Flex UNHF

Low Halogen inks for flexible applications

Issue No. 008/2019

Outdoor Use

IcoPrint FLEX UNHF have been tested for resistance to weathering in a Xenon bulb weatherometer to SAE J1960 standards.

Maximum expected outdoor life is for up to 12 months, when printed on superior grade self adhesive PVCs designed for external exposure, and the prints are exposed in temperate climatic conditions.

Colour Range

Four Colour Process Inks

UN004	4cp Black
UN052	4cp Yellow
UN135	4cp Magenta
UN215	4cp Cyan
UN396	Extender Base (for reducing colour density as needed)

Available in 5Kg pack sizes.

Line Colours

UN064	Yellow (Green Shade)
UN066	Yellow (Red Shade)
UN114	Orange
UN121	Red (Yellow Shade)
UN127	Violet
UN164	Red (Blue Shade)
UN165	Magenta
UN230	Blue
UN325	Green

Thinners/Additives

ZE637 UV Thinner

Available in 5Kg containers

ZE824 Flash Curing Additive

Available in 1Kg containers.

Storage

Containers should be tightly closed immediately after use.

IcoPrint inks and reducers should not be stored in direct sunlight or near sources of heat and should be kept away from peroxides.

For maximum shelf-life, storage should be between 10°C and 25°C. Stored in a cool environment the inks have a shelf-life of approximately 12 months from the date of manufacture.

Safety and Handling

IcoPrint Flex UNHF inks are formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic according to Directive 67/548/EC.

IcoPrint Flex UNHF inks have a flashpoint greater than 61°C and are not classified as a 'dangerous substance' under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)

Comprehensive information on safety and handling is given in the MSDS for this product, available on request.

Environmental Information

IcoPrint Flex UNHF inks do not contain ozone-depleting chemicals as described in the Montreal Convention.

This product is formulated free from aromatic hydrocarbons.

This product is also free of any volatile solvent and has less impact on the environment, when compared with traditional solvent-based products.

The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Product Information sheet out of date and users are requested to ensure that they follow current recommendations.

ICONINKS LIMITED

Hong Kong
ICONINKS LIMITED
 Unit B, 12/F., Reason Group Tower,
 No. 403 Castle Peak Road, Kwai
 Chung, N.T., Hong Kong
 Tel: +852 2426 6121
 Fax: +852 2420 4230
 Email: sales@hk.iconinks.com

China
ICONINKS (Nanjing) Co., Limited
 Rm. 916, Baoyuan Huafeng Economic. Hq. Building
 Xixiang Avenue, Xixiang Street
 Baoan Area, Shenzhen, P.R. China.
 Zip Code: 518102
 Tel: +86 755 2736 8101, +86 755 2736 8139
 Fax: +86 755 2736 8073
 Email: sales@iconinks.com

Australia
Icon 21
 30/4a Bachel Ave,
 Lidcombe NSW 2141,
 Sydney, Australia
 Tel: +61 0418 474908
 Mobile: +61 02 90296018
 Email: saeed@autofilm.com.au

Germany
ICONINKS GmbH
 Turnhallenweg 7a
 74858 Aglasterhausen
 Germany
 Tel: +49 (0) 62 62 912630
 Fax: +49 (0) 62 62 912096
 Email: info@int.iconinks.com

Turkey
AKER SERİGRAFİ BOYALARI
 Cebeci Mahallesi 2. cebeci yolu
 No:7 -34265 Sultangazi-Istanbul
 Turkey
 Tel: +90 (0)21 2594 3094
 Email: info@akerserigraf.com
 www.akerserigraf.com

Customer Service Hotlines:

Asia: +852 2426 6121 China: + 86 755 2736 8101 Australia: +61 (0)418 474908 Germany: +49 (0) 62 62 912630

www.iconinks.com