Dehesa Mari Martí 28600 Navalcarnero (Madrid) Spain
Tel +34 916 421 789 - Fax +34 916 421 834
general@afford-inks.com - www.afford-inks.com

95 SERIES

UV Plastic Container Screen Inks

Product Statement and Key Features:

The 95 Series range of UV Inks have been formulated to meet the needs of the container market for printing on various glass and plastic bottles used in the packaging of cosmetics, household chemicals and other similar applications.

95 Series is a multi-cure ink system and formulated to cure with UV-LED and traditional UV mercury vapour curing systems.

- Fast Curing
- Low Odour
- Unlimited Screen Stability
- Negligible Atmospheric Pollution
- Excellent physical and chemical resistance properties
- Resistant to acid, alkali, solvents, greases and lubricants, cosmetics, household products and detergents

Printing and Curing Guidelines:

These guidelines are intended only as a starting point for determining cure parameters, which must be determined under actual production conditions.

“Undercuring” the ink may result in poor adhesion, lower scuff resistance, reduced durability, and higher residual odour.

“Overcuring” the ink may reduce the flexibility of the printed part and adhesion of subsequent ink layers.

Mercury Vapour UV Curing:

95 Series inks cure when exposed to a single medium pressure mercury vapour lamp meeting the following criteria:

- 120+ mJ/cm² @ 600+ mW/cm².

Mesh selection is critical for optimum results, meshes in the range 140T – 165T are recommended, image type and fabric will dictate the most appropriate mesh grade, please consult with AFFORD technical services for further guidance.

Inks can be affected by stray UV light. Be aware of skylights, windows and overhead lights curing the ink in the screen; light filters are recommended.

Leaving a container uncovered may result in the ink’s surface forming a “skin”, caused by reaction with ambient lighting. Keep containers covered.

Most stencil types are suitable, 11.170 (photopolymer) or 11.701 (diazo) are recommended.

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It is essential that the printed ink film is given time to fully cure to ensure full chemical and mechanical resistance is achieved and it is the user's responsibility to confirm the cure schedule by testing resistance properties and suitability prior to commencing a full production run.

Post Curing:

The chemical reaction initiated by UV radiation will continue for some time after initial exposure and the dried prints emerge from the dryer.

It is therefore important that the adhesion of the first colour down, and all subsequent overprint colours, is assessed at regular intervals.

Pre-treatment:

To achieve adhesion to polyethylene, polypropylene and PET and for optimal product resistance, consistent levels of surface pre-treatment must be achieved.

A surface free energy of 52 -58 dynes/cm is recommended and is best achieved with the use of a gas/air flame. Polyolefines must be pre-treated

IMPORTANT:

Stir inks well before every use.

Always test application fully before beginning any production run as supposedly similar plastics can vary between different manufacturers, and even between different batches.

Certain plastics may be impregnated with lubricants or anti-static additives, which, like migrating plasticisers, and may impair ink adhesion, even after a considerable time from the time of printing.

Product Resistance:

95 Series UV inks have generally better chemical and solvent resistance properties when compared to conventional inks and will resist attack by most products likely to be packed in a printed container.

Resistance of prints immediately after cure is excellent, but for best results it is advisable to allow six hours after curing to achieve optimum resistance.

95 Series inks are not recommended for use in applications where outdoor exposure is a possibility.

Impact Resistance:

Impact resistance of some PVC and PETG containers can deteriorate after printing. This condition is related to time and may take up to twelve weeks to develop.

95 Series inks are formulated to minimise this condition, but it is essential to establish that inks and containers are fully compatible by conducting suitable impact or drop tests.

TECHNICAL DATA SHEET UV INKS SCREEN INK

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The following table shows the general resistance properties of 95 Series inks printed through a 165-180T monofilament screen onto pre-treated polyethylene, fully cured with one medium pressure Mercury Vapour Lamp of 80 w/cm, operating in a normal atmosphere. The resistance properties were assessed after 24 hours under AFFORD SL laboratory conditions ** further details available on request

Product	Excellent	Good
Aftershave Lotions		
Alcohol		
Alkalis (up to 10% concentration)		
Anti Freeze		
Battery Acid		
Bleach		
Brake Fluid		
Cosmetics		
Detergents		
Household Cleaners		
Motor Oil		
Petrol (Reference Blend)		
Skin Care Products		
Solvents		

Thinning and Wash Up:

95 Series inks are supplied ready for use; however inks can be adjusted to suit print shop conditions and print speeds if necessary with the addition of 1-10% by weight of 80.008; in case of white inks, 80.005 is the recommended thinner.

Washing up of screens should be carried out using 52.001 Screen Cleaner.

Performance Improvement Additives and Mixing Instructions:

29.140 hardener will enhance adhesion and chemical resistance after 24 hours from printing.

80.007 is a thinner which will increase the flexibility of the film. Don't use more than 5%.

80.013 will enhance the thixotropic behaviour of the ink. A maximum of 5% should be added.

** All % additions are by weight **

Storage:

95 Series inks and additives should be stored at temperatures between 10-25°C with a relative humidity between 30 to 70%.

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Safety Information Handling Instructions & Shelf Life:

Users are advised to wear gloves and barrier cream to prevent direct skin contact.

Safety glasses are suggested in areas where ink may be splashed.
If ink does come in contact with skin, wipe ink off with a clean, dry cloth (do not use solvents or UV reducers).

Wash the affected area with soap and water.

Consult the applicable Safety Data Sheet (SDS) for further instructions and warnings.

This ink series is a one-part, 100% solids UV-curable screen-printing ink and does not contain N-vinyl-2-pyrrolidone (NVP) or N-vinylcaprolactam (NVC/NVCL)

Ink and cleaning solutions should always be kept away from heat, sparks, and flames. If stored or transported at a different temperature, the ink should be allowed to reach room temperature before calibration or printing. This may have on adverse effect on performance and will affect any warranties given by AFFORD Industrial.

Recommended shelf life of this product is *** months from the date of manufacture when stored under preferred conditions.

Environmental Information:

95 Series inks are formulated to be free from aromatic hydrocarbons and any volatile components and can therefore be considered to have a lower impact on the environment, when compared with solvent based products, the inks do not contain any ozone depleting chemicals as described in the Montreal Convention.

Colour Range Table:

000 - TRANSPARENT BASE	002 - PROCESS YELLOW	006 - PROCESS BLUE	052 - EXTRA MAGENTA	009 - PROCESS BLACK	110 - EXTRA WHITE OPAQUE	204 - EXTRA YELLOW	229- LEMON YELLOW
239 - PRIMROSE YELLOW	249 - GOLDEN YELLOW	309 - ORANJE	339 - ORANGE EXTRA	400 - BRILLIANT RED	404 - EXTRA RED	420 - INTENSE RED	500 - MAGENTA EXTRA
600 - PERMANENT BLUE	672 - REFLEX BLUE	700 - VIOLET	800 - PERMANENT GREEN	900 - BLACK			

AFFORD Quality Statement:

Afford Industrial SL assures the quality of this product. Afford cannot, however, guarantee the finished results because Afford exercises no control over individual operating and production procedures. While technical information and advice on the use of this product is provided in good faith, the user bears sole responsibility for selecting the appropriate product for their end use requirements. Users are also responsible for testing to determine that our product will perform as expected during the printed item's entire life cycle from proofing, printing, post print processing, and shipment to end use. This product has been specially formulated for use with the printing process indicated within the technical information, and it has not been tested by any other method. Any liability associated with the use of this product is limited to the value of the product purchased from Afford Industrial SL.

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Support:

AFFORD Industrial are a company with international sales coverage, and as such can offer technical, engineering and sales support to our customers worldwide. If you require more information regarding this product, or any of our extensive range of products for screen, pad, digital, flexo and gravure print processes, please contact your local sales representative.

Disclaimer:

All information on this data sheet is based on laboratory tests carried out by Afford Industrial S.L. and from end user experience in print shops. Procedures and directions for use of Afford Industrial products (including printing and after-treatment) must be considered as recommendations only, with no warranties expressed or implied. The user of the products described herein is solely responsible for determining suitability of any Afford Industrial product(s) for the chosen application. Afford Industrial recommends that all products be pre-tested prior to full-scale production use. Also, the user must make sure he complies with the current legislation situation of patents and third party rights when applicable. This data sheet supersedes all previous publications. January 2021.

TECHNICAL DATA SHEET UV INKS SCREEN INK