

## VioGraph VGF Series

## SunPromo® Graphic Screen Printing Inks

### 1. Description

VioGraph VGF series inks are a very versatile range of UV curing screen printing inks specifically formulated to meet the needs of point of purchase advertising material producers.

VioGraph VGF series inks feature wide ranging adhesion, rapid curing and easy to use inks ideally suited for multipurpose use in graphic screen printing applications such as point of purchase, advertising, signs, self-adhesive decals, window displays, etc.

### 2. Product Features\*

- Wide ranging adhesion encompassing all plastics routinely used for In-store advertising
- Adapted for fast, adjustment free running on large format multi-colour presses
- Reliable off line adhesion on corrugated and many rigid sheet polypropylene materials
- ISO12647 (FOGRA) compliant process colour set with high transparency
- Consistent colour reproduction and resistance to halftone flooding
- Attractive high satin finish consistent across many substrates
- Easy screen cleaning with minimal staining of screen mesh
- Free from chlorine, ITX, benzophenone and its derivatives and VOC's

\*Specific application performance data, where available can be provided by your Sun Chemical representative.

### 3. Product Suitability\*

#### 3.1 Applications

VioGraph VGF series inks are ideally suited for multipurpose use in graphic screen printing applications such as point of purchase, advertising, signs, banners, self-adhesive stickers, window displays, etc.

#### 3.2 Substrates

VioGraph VGF series inks are designed to cover the widest possible range of sheet substrates, to enable advertising display producers to use a single ink system to meet all their everyday screen print requirements.

Successful results have been obtained on many grades of flexible and semi rigid PVC, paper, board, pre-treated polypropylene in both corrugated and solid sheet form as well as hard plastics such as acrylic, polystyrene, ABS, PETG, and polycarbonate.

All polyolefin substrates require pre-treatment of some form, and as a guide the surface tension should be in excess of 42 dynes/cm to ensure good ink adhesion. It is strongly recommended that adhesion and flexibility be pre-tested on all substrates prior to commencing full commercial print runs.



### 3.3 Self Adhesive Vinyl Decals

Not all grades of self-adhesive vinyl are suitable for decoration using UV curing inks. Some grades suffer from embrittlement resulting in difficulties with application and removal of stickers.

A further potential problem is edge curl, when UV curing ink is applied as a bleed-off. The incidence of this depends upon the grade of vinyl and the quality of the adhesive used. Edge curl effects can normally be avoided by leaving an unprinted border.

Specialist UV inks for exterior vinyl decals are available, for further information please contact your local Sun Chemical representative.

### 3.4 Highly Plasticised PVC

Some PVC substrates such as banner grade PVC and self-cling PVC (electrostatic) contain large amounts of plasticizer which can migrate into printing ink films over time and 're-wet' the inks, this process can compromise the adhesion and hardness of the ink film.

Experience indicates that VioGraph VGF inks are successful on many grades of banner PVC but pre-testing is essential since the migration potential of the plasticisers used varies greatly. Film hardness and surface tack should be confirmed after an ageing period of approximately two weeks.

VioGraph VGF inks are not recommended for use on self-cling electrostatic PVC, for this material VioFlash VFC and VioFlex VFX series inks are better choices.

### 3.5 Semi Rigid PVC

Not all grades of semi rigid (or rigid) PVC are suitable for decoration using UV curing inks. Some grades may also be susceptible to embrittlement with gradual degradation of impact resistance on aging of the print, particularly when printing multi-layer builds.

### 3.6 Exterior Durability

VioGraph VGF SunMatch blending inks are not recommended for prolonged outdoor exposure.

VioGraph VGF process set is suitable for use in limited outdoor exposure applications, where the durability requirement is less than 6 months. Durability of the set can be extended to approximately 24 months in Northern European conditions, by using the VGF0015 LF Process Yellow.

\*Please refer to your local Sun Chemical representative for specific details.



## 4. Product Range

VioGraph VGF SunMatch base inks			
Primrose	VGFY34	Blue	VGFB50
Golden Yellow	VGFY54	Green	VGFG50
Orange	VGFO54	Blending Black	VGFN50
Scarlet	VGFR24	Blending White	VGFW50
Red	VGFR54	Extender Base	VGFE50
Magenta	VGFM50	Dense Black	VGFN70
Violet	VGJV50	Opaque White	VGFW70
VioGraph VGF SunMatch process inks			
Process Yellow	VGFO014	Process Cyan	VGFO053
L/F Process Yellow	VGFO015	Process Black	VGFO077
Process Magenta	VGFO042	Process Base	VGFO085
VioGraph VGF inks modifier			
Reducer / Thinner		TU11	

### 4.1 Colour Range

VioGraph VGF series inks are available in the SunMatch colour range of 9 strong, bright mono-pigmented shades which together with black, white and extender base form a complete ink blending and mixing system. The SunMatch blending system allows mixing of practically any colour, including Pantone®\*, RAL and HKS and is fully compatible with both Formulator and Formulator IDS ink and colour match management systems.

For further information on Pantone®\* (and other colour specification systems) or Formulator ink management products, contact your local Sun Chemical branch.

VioGraph VGF series inks also feature an opaque white and dense black should extra opacity or density be required.

\* Pantone Inc.'s check standard trademark for colour

### 4.2 Process Printing

VioGraph VGF series process inks are designed to allow the production of print compliant with the colour and transparency specifications which form part of the ISO12647 process control standards.

When printed onto suitable compliant substrate via a 150-34 mesh, colour coordinates within the specified tolerances for cyan, magenta and yellow can be achieved. ISO 12647 Part 5 deals with screen printing and specifies three gamut classes, VioGraph VGF series process inks are designed to allow gamut class 2 printing.

Compliance can only be assured by careful measurement and strength adjustment of the individual process colours and may not be possible in all circumstances depending on substrate and exact processing conditions.



## 5. General Handling

### 5.1 Storage and Shelf Life

VioGraph VGF series inks should be stored in closed, black polyethylene containers at temperatures between 5-32°C. VioGraph VGF series inks have a minimum shelf life of 12 months but can remain usable for longer periods, depending on storage conditions.

For more specific handling advice refer to the Safety Data Sheet.

## 6. Printing Conditions\*

### 6.1 Curing

VioGraph VGF series inks cure by exposure to UV light. Actual cure speeds will vary depending on the UV curing unit used, the ink shade, mesh grade and other printing parameters that affect ink deposit. Belt speeds as high as 40 m/min, with two 80 watts/cm lamps can be achieved, dependent on these variables. Full ink adhesion can only be achieved if the ink film is fully cured.

Substrates can have differing receptivity to UV ink, and on certain rigid and/or coloured materials it may be necessary to cure ink more effectively to achieve satisfactory adhesion. It is always advisable to determine optimum drying schedules under specific conditions before commencing with full production.

Cure Accelerator UVAD901 is a liquid additive which can be used to improve the through curing of thicker ink films or where difficult to cure, blended colours have to be used. A maximum of 3% by weight should be added.

VioGraph VGF series inks are not generally suited to flash curing, VioFlash VFC series inks are the optimum choice for flash curing on paper, board and PVC substrates.

### 6.2 Viscosity Reduction

VioGraph VGF series inks are supplied press-ready and should not need adjustment under normal conditions. Should viscosity adjustment be considered essential, up to 5% by weight of UV reducer TU11 may be added.

### 6.3 Printing Materials

High quality stencil materials such as those in the SunCoat range are recommended for best results. Product Data Sheets and detailed specialist advice on choice of emulsions, films and all related stencil products can be obtained from your local Sun Chemical branch.

Fine polyester mesh with a mesh count of 140 – 180 threads/cm and a medium/hard sharp polyurethane squeegee should be used.

### 6.4 Coverage

Up to 75 m<sup>2</sup>/kg may be expected, but coverage is dependent on a number of printing factors including, mesh choice, stencil thickness, squeegee, etc.



### 6.5 Washing Up

Commercial screen cleaners, such as those in the 'SunCoat' range are recommended for best results. Product Data Sheets and advice on the SunCoat range of screenwashes is available from your local Sun Chemical branch.

### 6.6 Screen Recovery

Any residue of VioGraph VGF series inks is easily removed from the screen following printing using a quality emulsifiable screenwash, such as those in the SunCoat range, followed by a clean water rinse.

Automatic screen recovery systems using individual or combined solvent and strip chemicals are efficient at removing VioGraph VGF series ink residues.

VioGraph VGF series inks have been shown to have a low mesh staining potential.

\*Please refer to your local Sun Chemical representative for specific details.

## 7. End-use safety

### 7.1 Handling

VioGraph VGF series inks should be used in accordance with normal standards of industrial hygiene. Please refer to the information provided on product labels and relevant Safety Data Sheets. For more details on handling of UV materials please refer to EuPIA's latest document, 'Guidelines for Printers on the Safe Use of Energy Curing Printing Inks and Related Products' ([www.eupia.org](http://www.eupia.org)).

### 7.2 Toys (Safety) Regulations EN71-3: 1995

These inks have been formulated to exclude heavy metal based pigments. However, inks are supplied without warranty due to risk of contamination throughout the many processing steps from raw materials to finished toy. To ensure conformity analysis, is therefore essential. The inks may be analysed or alternatively the finished toy (note however that the legislative limits apply to the toy itself and not to the wet ink as supplied). Please refer to our company statement concerning inks for toys.

## 8. Technical Assistance / Contacts

For further information, please contact your local Sun Chemical team.

Our Products are intended for sale to professional users. The information herein is general information designed to assist customers in determining the suitability of our products for their applications. All recommendations are made without guarantee, since the application and conditions of use are beyond our control. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a print run. There is no implied warranty of merchantability or fitness for purpose of the product or products described herein. In no event shall Sun Chemical be liable for damages of any nature arising out of the use or reliance upon this information. Modifications of the product for reasons of improvements might be made without further notice.

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