SolarFlex® FSP-T Process Inks

Part of the SOLARIS® System

1. Description

SolarFlex® FSP-T Process Inks is a versatile range of high-performance UV flexo process inks offering the flexible film and narrow web printer the capability to print compliant food packaging, pharmaceutical packaging or packaging for other sensitive applications where a risk from migration has been identified.

2. Product Features*

- Low odour and low migration potential.
- Low viscosity and good flow, optimised for reliable and consistent press performance.
- Adhesion to a wide range of impervious substrates.
- Based on Sun Chemical's patented M-Cure® photoinitiators.
- Fast cure speed to ensure full cure at high press speeds.
- Silicone-free for excellent trapping, easy lamination or post-print finishing.
- Designed to meet the requirements for printing food packaging according to Regulation (EC) No 1935/2004.
- Formulated without VOC's, photoinitiators with a propensity to migrate or materials based on Bisphenol A.
- Designed to meet the requirements of the Swiss Ordinance** and Nestlé Standard***

3. Product Suitability*

3.1 Applications

SolarFlex® FSP-T Process Inks are intended for use in the following areas:

- Primary food packaging, pharmaceutical packaging or other sensitive applications.
- Suitable grades of flexible films, paper or top-coated plastic self-adhesive labels.
- Other paper or board applications requiring low migration potential.
- Can be over-varnished to improve gloss, physical and chemical resistance.
- Can be hot foil stamped with the appropriate 'stampable' overprint varnish.

SolarFlex® FSP-T Process Inks are **not** suitable for use in the following areas:

- Uncoated Thermal papers.
- Direct food contact.

Printers should assure themselves that use of these products on food packaging has been fully assessed for risk and the finished printed product meets all relevant regulatory requirements.

SolarFlex® FSP-T Process Inks should not be used for other end uses without prior discussion with your local Sun Chemical representative

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

*** Ordinance of the Federal Department of the Interior (DFI) on materials and articles intended to come into contact with food (RO 2020) Section 12 Printing Inks (Annex 10 edition 2.1)*

**** Nestlé - The latest version of "Printing Inks For Food Packaging" – April 2024*

3.2 Substrates

SolarFlex® FSP-T Process Inks are suitable for most grades of label stocks commonly used in the Narrow Web industry as well as typical substrates used for flexible packaging. Corona treatment is recommended for non-top-coated plastic substrates to ensure an optimum treatment level of 38-44 Dynes/cm but preliminary tests should always be conducted prior to producing commercial print. With significant variation between different grades of substrates, the printer should take any specific advice from the substrate manufacturer and make any necessary tests under realistic conditions before commercial printing.

3.3 Print Finishing

SolarFlex® FSP-T Process Inks can be over-varnished to improve gloss, physical and chemical resistance properties and are suitable for hot foil stamping or cold-foil blocking when over-printed with the appropriate blockable overprint varnish or in conjunction with an appropriate adhesive.

SolarFlex® FSP-T Process Inks will accept most types of VIP (Variable Information Printing), but great care should be taken when producing print for subsequent VIP due to the wide variety of processes and materials available. Best results can often be obtained using an appropriate overprint varnish*.

* Please refer to your local SunChemical representative for specific details.

4. Safety, Health and Environment

SolarFlex® FSP-T Process 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'.

4.1 Storage

SolarFlex® FSP-T Process Inks are supplied in 5 kg tamper-evident black plastic buckets with spouts, 20 kg Metal Pails or 200 kg Barrels. Shelf life is 12 months from date of manufacture in their original containers when stored between 5° and 25°C and protected from direct sunlight but may remain useable for longer periods.

4.2 Waste Disposal

Care should be exercised in the disposal of printing ink waste. This should be carried out in accordance with good industrial practice, observing all the appropriate local regulations and guidelines. For more specific handling advice refer to the Safety Data Sheet (SDS).

4.3 EuPIA Exclusion Policy

SolarFlex® FSP-T Process Inks are made using Good Manufacturing Practice and in accordance with the latest EuPIA Guideline on Printing Inks applied to Food Contact Materials. In particular, this excludes from use all materials classified according to the CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures as carcinogenic, mutagenic or toxic for reproduction in categories 1A or 1B with hazard statements H340, H350 or H360, in addition to toxic or highly toxic materials with hazard statements H300, H301*, H310, H311*, H330, H331, H370 or H372* (* may be permitted if safe use can be demonstrated following risk assessment). Pigments based on compounds of Sb, As, Cd, Cr (VI), Pb, Hg, Se, certain dyes, solvents, plasticisers and miscellaneous materials are also excluded. (See www.eupia.org for details)

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5. Printing Conditions

5.1 Printing Viscosities

SolarFlex® FSP-T Process Inks are supplied press-ready and should not need adjusting under normal conditions whether using open-pan or chamber configurations.

5.2 Additives

Several low migration press-side additives are available for non-standard conditions or applications.

5.3 Wash Up

A variety of proprietary wash-up solutions are available which are suitable for use with UV inks and press components such as flexo plates and pipes. Please contact your Sun Chemical representative for recommendations and advice.

5.4 Plates and Rollers

SolarFlex® FSP-T Process Inks are suitable for use with UV compatible photopolymer plates commonly used in the industry. All rollers, tubes, sealants etc. must also be resistant to UV materials.

5.5 Aniloxes

SolarFlex® FSP-T Process Inks are optimized to cure at typical optical print densities. Printing at higher densities or using aniloxes outside the normal range can lead to cure issues. A typical range of densities is indicated below achieved with aniloxes in the range of 2.0 to 4.0 cm^3/m^2. Intense Process inks can be printed with lower volume aniloxes than standard strength.

	ANSI T FILTER	DIN 16536
Yellow	0.90-1.10	1.20-1.40
Magenta	1.30-1.40	1.30-1.40
Cyan	1.33-1.55	1.30-1.50
Black	1.50-1.70	1.50-1.70

6. End-Use Safety / Assumptions

Acceptable technical performance of **SolarFlex® FSP-T Process Inks** is dependent on:

- The application of Good Manufacturing Practice.
- The press being fitted for UV printing, including suitable plates, pipes and pumps.
- The press and associated equipment, being free from contamination from previously used products.
- Inks not being mixed or contaminated with other products which may compromise migration performance, cure and other properties.
- Control of film weight and print density.
- Adequate curing on press to ensure that the print is dry before conversion. A UV dose of at least 100mJ/cm^2* per lamp is recommended.
- UV lamp system maintenance, in particular clean reflectors and windows as well as lamp lifetime and output monitoring.
- Appropriate packaging design and structure.

Choice and control of film weight, curing and substrate are printer technical requirements for which the Sun Chemical technical team can provide assistance if required.

* UV dose measured with Fujifilm UVScale M film and is the total of UVA, UVB, UVC and UVV - Test method available on request.

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	Code	Description	Lightfastness	Alkali	Alcohol	Soap	Grease
4-colour process	SFSP26-T	PROCESS YELLOW	5	+	+	+	+
	SFSP27-T	PROCESS MAGENTA	5 [1]	-	+	-	+
	SFSP27B	PROCESS MAGENTA	5 [1]	-	+	-	+
	SFSP25-T	PROCESS CYAN	7	+	+	+	+
	SFSP46-T	PROCESS BLACK	7	+	+	+	+
Intense 4-colour process	SFSP30-T	INTENSE PROC YELLOW	5	+	+	+	+
	SFSP35-T	INTENSE PROC MAGENTA	5 [1]	-	+	-	+
	SFSP35B	INTENSE PROC MAGENTA	5 [1]	-	+	-	+
	SFSP38-T	INTENSE PROCESS CYAN	7	+	+	+	+
	SFSP24-T	INTENSE PROC BLACK	7	+	+	+	+
Extended Gamut Process Inks	SFSP66-T	EG PROCESS ORANGE	5	+	+	+	+
	SFSP67-T	EG PROCESS GREEN	7	+	+	+	+
	SFSP68-T	EG PROCESS VIOLET	6-7	+	+	+	+
	SFSP69-T	EG PROCESS REFLEX	6-7	+	+	+	+

[1] Lightfastness under wet conditions, such as during external exposure is significantly worse for certain colours. Please consult our technical services for recommendation of alternative shades.
Test Methods available on request.

Please see www.sunchemical.com for further information on Sun Chemical products and services and contact your local Sun Chemical representative for specific product advice.

For further information on migration-compliant printing, please refer to Sun Chemical's document, **DESIGNING PACKAGING WITH CERTAINTY – A BEST PRACTICE GUIDE.**To fulfil its responsibility within the supply chain, Sun Chemical will provide, upon request and under non-disclosure agreement, information regarding potential Migratable components, where present in these inks that are intended for food packaging applications.

Please note that the process inks are optimized for the specific conditions associated with process printing so it is strongly recommended not to use process inks for colour-matching purposes.