SunCure® Starluxe

UV Curable Ink System for Carton, Luxury Packaging and Narrow Web Applications

1. Description

SunCure® Starluxe is a highly versatile range of UV curable lithographic inks designed for outer surface printing of carton board and foil boards, selected plastics and non-absorbent substrates. SunCure® Starluxe is also designed for the printing of labels, sleeves, tags and tickets.

2. Product Features

- Sheetfed or web offset printable
- Extensive colour range, including resistant colours
- Adhesion to a wide range of paper, board and synthetic substrates
- Excellent dot gain and trapping properties for high print quality, including reversed out print
- Suitable for in-line or off-line coating, foil stamping and lamination
- Formulated in accordance with the EuPIA Exclusion policy for printing inks and related products*

3. Product Suitability

3.1 Applications

SunCure® Starluxe inks are intended for use in the following areas:

- Paper and carton board, non-food packaging
- Luxury packaging, such as liquor or cosmetic cartons
- Plastic packaging, on appropriately selected substrates
- Paper and top coated plastic self-adhesive labels
- Appropriately selected sleeve plastics, including shrinkable plastics

SunCure® Starluxe inks are **not** suitable for use in the following areas:

- Primary packaging for food, where the packaged goods are in direct contact with the non-printed side of the packaging, e.g. juice or milk cartons
- Microwave or ovenable applications
- Direct food contact, or where low migration properties are demanded due to pack design or the nature of the packaged goods due to the risk of direct contact

**EuPIA Exclusion policy for printing inks and related products. 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.*

3.2 Substrate

SunCure® Starluxe inks are suitable for use on paper and carton board and a wide range of non-absorbent substrates. Corona treatment is recommended for non-top-coated plastic substrates to ensure an optimum treatment level of 38-44 mNm^{-1}. Note: there is significant variation between different grades of substrates. The printer should follow specific advice from their substrate manufacturer and make any tests necessary to prove performance under realistic conditions before commencing with commercial printing.

3.3 Print Finishing

SunCure® Starluxe inks should be coated to improve gloss, physical and chemical resistance properties. A range of **SunCure® Coatings** is available for use with the inks, to provide a wide variety of finishes, including gloss, satin, matt and special effects. Printed material produced with these inks is suitable for hot and cold-foil stamping, with or without an appropriate coating. Note: there are many types of foil, which require specific application conditions. Testing is recommended to establish optimum foiling conditions before proceeding with commercial printing.

SunCure® Starluxe printed materials can be successfully laminated in-line or off-line using solventless adhesives, using standard converting processes. Please contact your Sun Chemical technical service representative for specific information.

4. Safety, Health and Environment

4.1 Product Handling

SunCure® Starluxe inks should be used in accordance with normal standards of industrial hygiene and good working practice. Please refer to the SunCure Starluxe Safety Data Sheet for specific information.

4.2 EUPIA Exclusion Policy

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4.3 Storage

SunCure® Starluxe inks are supplied in 3 kg black plastic buckets. Shelf life for most shades is at least two years from date of manufacture, when stored in original unopened containers between 5° and 25°C and protected from direct sunlight. The inks may remain useable for longer periods, but once they have reached this age they should be checked before use. Note that inks based on non-resistant pigments may lose colour strength during that period (see section 6) and therefore have a shelf life of 12 months from the date of manufacture. If in doubt, please contact your Sun Chemical representative for advice. Inks returned from press that have not been contaminated in any way should be re-used within three months.

4.4 Waste Disposal

Printing inks, coatings and printing residues should be disposed of in accordance with Local, EU and National regulations. Please refer to the product Safety Data Sheet for additional information.

5. Printing Conditions

5.1 Printing Conditions

SunCure® Starluxe inks are supplied press-ready and should not need adjusting under normal printing conditions. The press and roller system should be thoroughly cleaned to avoid cross-contamination from products used previously or adhesion and cure may be affected.

5.2 Additives

A number of press-side additives are available for adjusting properties in non-standard conditions or applications. As a general principle, use of additives should be a last resort, when process adjustment has not solved particular application issues. Further, the maximum addition level should be respected, to avoid the potential creation of other issues.

5.3 Wash Up

A variety of proprietary wash-up solutions are available which are suitable for use with UV inks and press components, including rollers, blankets and plates.

5.4 Fountain Solutions

Depending on press type and substrate, a number of **SunFount®** fountain solution additives are available from Sun Chemical for use with these inks, to provide optimum emulsification and printing properties. These inks are usually run with low or no alcohol founts and **SunFount®** 480 and 485 are proven products for most applications.

Please contact your Sun Chemical representative for consumables advice and recommendations.

6. End-Use Safety / Assumptions

Acceptable technical performance of **SunCure® Starluxe** inks is dependent on:

- The press being fitted for UV printing, including suitable rollers, blankets and plates
- Control of film weight and print density
- Adequate curing capacity on-press to ensure that the print is fully cured before conversion
- Appropriate packaging design and structure

Choice and control of film weight, curing and substrate are printer technical requirements for which Sun Chemical cannot accept responsibility. Depending on measuring equipment the process inks are designed to be printed at the following typical print density values. It is strongly recommended these are not exceeded as cure may be impacted and print handling properties compromised.

	ANSI T FILTER	DIN 16536
Yellow	0.90-1.10	1.25-1.35
Magenta	1.35-1.45	1.35-1.45
Cyan	1.35-1.45	1.35-1.45
Black	1.70-1.80	1.70-1.80

Important Information

**Inks coded USTX52, UCX55 and UCX261 (See Table) are based on dye complex (fanal-type) pigments and these products are not suitable for use on food packaging. They are also not recommended for printing on plastic or filmic substrates as the pigment may “bleed” into the substrate. Inks of this type have poor resistance properties, especially on non-absorbent substrates such as foil board, so are not recommended for use where good lightfastness, solvent resistance or outdoor resistance properties are required. Due to the non-resistant nature of the pigments, ink colour strength can decrease on extended in-can storage. Care should be exercised when coating print made with “fanal-type” inks as some types of coating, especially those with high amine content, can cause colour shift or “burn-out” of colour. If in doubt, please contact your Sun Chemical customer technical service representative for advice and product recommendation.

7. SunCure® Starluxe – Product Information

		Product Code	Product Description	Lightastness# Full Strength	Alkali#	Alcohol#
Process Colours		**USTX26**	Process Yellow	5	+	+
		USTX28	Process Yellow (1st Down Opaque)	5	+	+
		USTX27	Process Magenta	5	-	+
		USTX25	Process Cyan	7	+	+
		USTX46	Process Black	7	+	+
		USTX08	Mid Resistant Process Yellow	6	+	+
		USTX54	Resistant Process Yellow	7	+	+
		USTX37	Mid-Resistant Process Red	6	+	+
		USTX44	Resistant Process Red	7	+	+
PSO Process Colours		**USTX92**	PSO Process Yellow	5	+	+
		USTX94	PSO Process Magenta	5	-	+
		USTX97	PSO Process Cyan	7	+	+
		USTX09	PSO Process Black	7	+	+
Blend Colours	Intense	**USTX30**	Intense Yellow	5	+	+
		USTX35	Intense Magenta	5	-	+
		USTX38	Intense Cyan	7	+	+
		USTX24	Intense Black	7	+	+
	Non-Resistant	**USTX04**	Yellow 012	5	-	+
		USTX21	Orange 021	4	+	-
		USTX31	Warm Red	3	-	+
		UCX255	Rhodamine**	4	-	-
		USTX52	Violet**	3	-	-
		UCX261	Reflex Blue	3	-	-
	Resistant	**USTX14**	Green Shade Yellow	7	+	+
		USTX32	Red 032	6	+	+
		USTX33	Transparent Scarlet	6	+	+
		USTX36	Resistant Warm Red	6	+	+
		USTX88	Resistant Carmine	6	+	+
		USTX07	Resistant Blue Shade Red	6	+	+
		USTX56	Resistant Pink	7	+	+
		USTX53	Resistant Violet	7	+	+
		USTX63	Resistant Reflex Blue	7	+	+
		USTX71	Green	7	+	+
		USTX73	Resistant (072) Blue	7	+	+
		USTX50	Untoned Black	8	+	+
		USTX48	Transparent White		+	+
		USTX47	Non-yellowing Opaque White		+	+
		USTX84	Opaque White		+	+

Test methods are available on request. Note: the data refers to pigment properties, not those of the cured film. Lightfastness is measured according to Blue Wool Scale. Under wet conditions such as during external exposure lightfastness is significantly worse for certain colours. Resistant colours may differ slightly in shade from the equivalent non-resistant colour.

SunCure Starluxe USTX21, 25, 26, 27, 31, 32, 50, 52, 71, UCX255 and **261** may be used as approximations to the Pantone® color range. Note however that Pantone® guides are produced with conventional oil-based inks on optically brightened paper, so guideline matches may not translate to other substrates and ink systems. Colour blends made using guideline formulations should be checked before going to press and adjusted if required to meet specific conditions of use. Please consult Sun Chemical technical services for recommendations on alternative shades or blend formulations.

SunCure Starluxe USTX84 is intended for use as a blend colour. On “print friendly” substrates, it may function as a base or backing white. However, White ink specifically designed for those purposes are recommended most applications, please consult Sun Chemical technical services for recommendations.

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.

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