

SunCure® Lite Blend Colours

High performance inks for curing with energy efficient UV curing lamp technology

1. Description

SunCure® Lite Blend Colours are a range of high performance, UV curable, lithographic inks designed for printing for commercial and non-food packaging applications, using the latest generation of energy efficient* UV curing lamp technologies.

2. Product features

SunCure® Lite Blend Colours benefits:

- Sheetfed or web offset printable with excellent lithographic performance
- Colour blending range capable to produce most common Pantone® and bespoke special colours
- For printing on paper and board and appropriately selected paper label substrates
- Suitable for in-line or off-line coating**, and with foil stamping and lamination processes

3. Product Suitability

3.1 Applications

SunCure® Lite Blend Colours are intended for use in the following areas:

- Non-food packaging
- Commercial printing applications, including book and magazine printing, company reports, tags and labels, tickets, greeting cards, CD/DVD covers and inserts etc
- Appropriately selected grades of paper and board, paper label and self-adhesive label substrates
- Can be in-line or off-line coated** to improve gloss, physical and chemical resistance properties
- Curing under metal halide doped mercury vapour lamps
- Curing under UV LEDs on slower running presses (normally < 10,000 imp/hour)

SunCure® Lite Blend Colours are **not** suitable for:

- Direct food contact and primary food packaging applications
- Inserts for food, pharmaceutical or sensitive goods packaging
- Microwave or ovenable applications
- Children's books, magazines and toys
- Packaging for children's toys
- Printing on most plastics
- Curing under UV LEDs on fast presses (normally > 10,000 impr/hour)
- Any application where ink component migration could affect or damage material in close proximity, or in direct contact, with the print. We advise a risk assessment and/or a trial is made in such cases

* See Page 3 for an explanation of energy efficient lamp systems

**Due to the UV output wavelength characteristics of the new energy efficient UV curing lamps, it is very difficult to develop UV coatings that are functional for many applications. In particular, yellowing on cure is an issue. For practical reasons, it may be best to use standard end-of-press curing lamps to cure coatings, for maximum performance and appearance.

Whilst SunCure Lite inks are designed to be versatile in performance, they are unlikely to be suitable if used outside of the above described applications. If in doubt, please check suitability with your local Sun Chemical representative.



3.2 Substrates

SunCure® Lite Blend Colours are suitable for use on paper, carton board and appropriately selected self-adhesive label substrates. Whilst not designed for use on plastics and foil, some top-coated grades may be suitable, but adhesion and printability should be checked before printing. 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® Lite Blend Colours can be coated to improve gloss, physical and chemical resistance properties. Certain coatings suitable for energy efficient curing systems are available for use with these inks and further products are currently in development. Please contact your Sun Chemical representative for specific up to date recommendations. SunCure Lite printed materials can be successfully laminated in-line or off-line using solventless adhesives, using standard converting processes and subject to test prior to bulk production.

4. Safety, Health and Environment

4.1 Product Handling

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

4.2 Manufacturing and Materials

SunCure® Lite Blend Colours are formulated in accordance with the EuPIA Exclusion policy for printing inks and related products.

4.3 Storage

SunCure® Lite Blend Colours are supplied in 3 kg black plastic buckets. Shelf life is one year 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 should be checked before use. 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 resealed using their original lids to ensure they are not exposed to light and re-used as soon as is practically possible.

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® Lite Blend Colours are supplied press-ready and should not need adjusting under normal printing conditions. Where possible, use of additives should be avoided or cure properties may be compromised. The press and roller system should be thoroughly cleaned to avoid cross contamination of **SunCure® Lite Blend Colours** by products previously used, especially conventional inks, as cure may be affected. These inks are very reactive in daylight conditions and sensitive to UV light from overhead lights and, as a result, should not be left in the duct or on press for extended periods when printing is not taking place or overnight. If these inks polymerise on-press, as a result of light exposure, they become very difficult to clean off and roller damage may result.



5.2 Additives

A number of press-side additives are available for adjusting properties in non-standard conditions or applications, where press adjustment has not achieved a satisfactory result. As a general principle, use of additives should be a last resort, when process adjustment has not solved particular application issues. Furthermore, 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 for use with **SunCure® Lite Blend Colours** from Sun Chemical, 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 Sun Chemical customer technical services or your Sun Chemical representative for consumables advice and recommendations.

6. End-Use Safety / Assumptions

Acceptable technical performance of **SunCure® Lite Blend Colours** is dependent on:

- The press being fitted for UV printing, including suitable rollers, blankets and plates
- The press and associated equipment being free from contamination from previously used products
- The inks should not be mixed with other products, or else cure properties may be compromised
- Control of film weight and print density
- Adequate curing capacity on-press to ensure that the print is fully cured before conversion

Choice and control of film weight, curing and substrate are printer technical requirements for which Sun Chemical cannot accept responsibility. Please see notes overleaf regarding target print densities.

About curing under energy efficient lamp systems:

Over recent years there have been a number of developments in the Graphic Arts industry aimed at creating more energy efficient UV curing for the printer. The best-known examples are Light Emitting Diodes (LEDs), and metal halide doped or modified medium pressure mercury vapour lamps, both of which have been demonstrated at tradeshow and are being adopted by press manufacturers looking to incorporate this form of energy efficient curing into their presses.

The technology behind LED and doped lamps is different to traditional curing units, and alongside various claimed advantages such as low heat output, no ozone generation due to lack of short wavelength UV, and extended lamp lifetime, both have the major claimed advantage of reduced energy consumption for the printer. Both technologies also share a characteristic of emitting principally at longer UV wavelengths, typically 300-450 nm. However, the low energy output demands specially formulated inks and coatings in order to achieve cure and print performance characteristics at acceptable press speeds.

SunCure® Lite Blend Colours have been specifically formulated to take advantage of these longer wavelength emission characteristics and to cure effectively with most of the different available systems. Please contact your local Sun Chemical representative if you have any questions or need additional information about these products.



7. SunCure® Lite Blend Colours Product Information

	Product Code	Product	Lightfastness # Full Strength	Alcohol #	Alkali #
Blend Colours	LUV21-T	Orange 021	5	+	+
	LUV31-T	Warm Red	3	+	-
	LUV32-T	Red 032	6	+	+
	LUV52-T	Violet	4	-	-
	LUB53-T	Resistant Violet	7	+	+
	LUV55-T	Rhodamine	4	-	-
	LUV56-T	Resistant Rhodamine	7	+	+
	LUV61-T	Reflex Blue	4	-	-
	LUV71-T	Green	7	+	+
	LUV50-T	Black	8	+	+
	LUV48-T	Transparent white	-	+	+
	LUV84-T	Opaque white	-	+	+

Important Notes:

Excessive filmweight may lead to poor cure, marking during subsequent handling and set off in the stack. In particular, print density of black should be monitored during printing and controlled. High colour build by excessive trapping of these inks may also result in poor cure and reprographic adjustments are recommended to minimize un-necessary trapping.

LUV48-T transparent white will not cure sufficiently under LED sources, please contact Sun Chemical for specific advice regarding clear inks and coatings suitable for curing by LED sources.

Inks coded LUV52-T, 55-T & 61-T (see Table) are based on dye complex (fanal-type) pigments. These inks are 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.

Lightfastness is measured according to Blue Wool Scale. Under wet conditions such as during external exposure lightfastness is significantly worse for certain colours. # Test methods available on request

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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.