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# Technical Information

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LOTUS PLUS INT - 12/02/01

## LOTUS PLUS

### Duct stable offset inks for very high productivity in sheetfed printing and rotary business form printing

Even higher printing speeds, further increases in productivity and improved press stability are amongst the "Plus" factors demanded by printers today. **Lotus Plus** from Coates Lorilleux gives you the added press performance needed without compromise.

#### Characteristics

- **Lotus Plus** has been designed for high speed printing on the most recent machines.
- Extended duct and roller stability.
- Excellent lithographic behaviour especially on faster machines : achieving rapid and stable ink water balance under a wide range of press conditions ensures high, consistent print quality. The fast make-ready and start up times achievable with **Lotus Plus** allow a reduction in print waste.
- Fast setting with a very low risk of set off, providing very high stack capability with reduced spray powder, allowing the fastest work and turn performance on all types of sheetfed presses.
- Good mechanical resistance after minimum delay allows fast conversion on a wide range of substrates.
- With good levels of gloss and mechanical resistance together with

high dot fidelity within international accepted norms **Lotus Plus** assures high print quality.

- **Lotus Plus** can equally be used for rotary business form printing.
- **Lotus Plus** dries quickly and effectively even without auxiliary drying assistance (Infra Red, hot air etc.). Nevertheless, it is responsive to this type of equipment. Note that when using such drying equipment, to reduce the risk of set-off or blocking in the stack due to softening of the ink film, the stack temperature should not exceed 35-40°C.

#### Recommendations for use

**Lotus Plus** is designed to meet the needs of the sheetfed commercial and publication market. **Lotus Plus** can equally be used to print packaging and for rotary business form printing.

**Lotus Plus** is ten inks for 4-colour process printing.

The standard 4-colour range has been supplemented with additional products to respond to a range of requirements regarding colour sequence, intensity, and resistances.

The full range of products will provide a process set to meet a variety of needs. For further information please contact our technical services.

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## Finishing

### Sheetfed printing :

**Lotus Plus** can be over varnished with our range of **Deltalac** or **Aquasol** water based coatings in-line or off-line. For advice on their use please refer to the technical information leaflets on the **Deltalac** and **Aquasol** products and the leaflet **General properties of Deltalac varnishes**.

For UV varnishing or film laminating it is essential to ensure that the print is properly dry. For UV varnishing please refer to our technical information leaflets concerning **Ultracure** UV varnishes and to the leaflet **UV varnishing on dry conventional inks**.

For lamination we advise:

- When using solvent based adhesive select the inks indicated in the table to have appropriate solvent resistance (ISO 2837).
- When using water based adhesive select the inks indicated in the table to have appropriate alkali resistance (ISO 2838).

Whichever form of print finishing is to be used, avoid excessively high ink film weights and see the paragraph on *Resistances*.

### Rotary business form printing:

Continuous stationery and business form printing is not usually varnished or laminated. For prints which are to be subsequently printed by non impact methods, see the paragraph *Resistances* and our leaflet **Second impression non impact printing on offset prints**. For further information consult our technical services.

## Substrates

**Lotus Plus** inks have been created to print sheetfed on gloss coated papers and more particularly on modern coated papers.

Benefiting from a balanced tack and viscosity, **Lotus Plus** can also be used on a number of other paper substrates (uncoated, gloss coated, semi matt and some matt coated) or carton board.

**Lotus Plus** is equally well adapted to rotary business form use on:

- offset paper for continuous stationery,
- magnetic papers and certain security papers used in security and financial printing,
- carbonless copy papers (see paragraph on *Resistances*).

**Lotus Plus** is not designed to be used on non porous substrates or synthetic papers.\*

\* Due to their surface porosity and certain specific surface characteristics some substrates such as those noted below can present particular difficulties, for example;

- certain low porosity coated papers (notably certain chrome coated),
- certain highly absorbent papers where the rate of ink absorption is very high (notably certain uncoated papers) giving a risk of powdering,
- certain matt-coated substrates which can be particularly abrasive giving marking, set-off or print finishing problems.

These specific difficulties can increase with increasing substrate weight and thickness and can occur equally on carton board. In these and other cases where mechanical handleability and rub resistance are a particular requirement, we recommend a consultation with our technical services or a test printing to confirm suitability before embarking on a full print run. In rotary business form printing it is equally important to take special care when using papers with different porosity to that normally used in continuous stationery printing (improved offset paper, coated, etc...) or very low grammage or fragile substrates.

## Machines

**Lotus Plus** has been specially developed to satisfy the needs of the printer using the latest high speed printing machines :

- stable at high speed on the fastest machines currently in use (Heidelberg, KBA Planeta, Komori, MAN Roland, Mitsubishi etc.) as well as on rotary business form machines of various configurations.
- responds rapidly to the most recent inking systems (preset, remote control, etc)

**Lotus Plus** can be used on all machines equipped to print 1,2,3,4,5 or 6 colours, irrespective of the dampening system used (conventional, alcohol or integrated).

**Lotus Plus** can also be used on printing machines equipped for letterpress and dry offset printing using, for example, photopolymer plates to print cheque backgrounds.

## Machine stability

**Lotus Plus** inks need not be cleaned from ink duct and inking rollers at the end of the print run under normal conditions. Nevertheless, for particularly long stops cleaning of the roller train is advised.

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Stability on the press can be further increased by using an antioxidant spray such as **Antisiccatif 950**.

## Additives

**Lotus Plus** inks are supplied ready for use. Under some conditions (fragile or delicate substrate, difficult impression, low ambient temperature) it may be necessary to adjust the inks characteristics. For recommendation of suitable additives or further information please contact our technical services.

## Fountain solutions

**Lotus Plus** inks are compatible with a wide range of fountain solutions with and without isopropyl alcohol (0-12%). It is necessary however to choose the fount additive best suited to the type of water and the printing conditions : the concentration must be carefully controlled by measuring conductivity and pH. If help is needed in choosing the fount additive best suited to the printing conditions and water, consult our technical services.

**Note** : Some carbonless copy papers used in rotary business form printing are particularly sensitive to acid conditions. Keep the pH of the fount above 5.5.

## Plates, blankets and rollers

**Lotus Plus** inks are compatible with all blankets and rollers and with all plates and stereotypes, currently in use in offset and letterpress and which are resistant to vegetable and mineral oils.

## Washing up

**Lotus Plus** can be cleaned up with the help of cleaning solvents currently in use : see the technical data sheet from the supplier. For advice on the most appropriate product or for specialised cleaning agents consult our technical services.

## Health and safety

Health and safety data sheet available on request.

## Environment

Our **Lotus Plus** inks have been formulated with respect to appropriate environmental issues and to allow the printer to comply with associated regulations through:

- the use of raw materials from renewable resources where applicable;

- the choice of liquid components with very low volatility (cf. Directive 1999/13/CE);
- low heavy metal content (Toy Regulations EN 71/3, CONEG regulations) and minimal impact of our inks on the use of printed matter as a secondary raw material for recycling, composting or incineration in accordance with the Directive 94/62/CE.

Further detailed information can be found in our brochure **Safety, Health and the Environment** or contact our technical services.

## Ink packaging

**Lotus Plus** is supplied in vacuum packed tins of 1.0 kg and 2.5 kg. Other ink packaging available to order.

## Resistances

The pigments used in **Lotus Plus** inks are not necessarily fully resistant to all post printing conditions that may be encountered. It is therefore necessary to indicate the resistance required at the time of ordering (see table overleaf). For each shade the table gives resistance values corresponding to the different ISO standards for solid prints made under standard conditions (ISO 2834).

## Remarks

For lightfastness of prints (ISO 2835) we mean their resistance to daylight without the direct influence of bad weather conditions measured by comparison to a calibrated set of 8 examples of blue dyed wools of increasing resistance to light fading. The use of apparatus equipped with a Xenon lamp permits accelerated testing.

The resistance times can vary in practice caused by a number of important factors: pigment compositions, substrate, colour strength, film weight used, format (solid, half-tones), storage conditions, exposure time, etc. In mixtures it is the component with the lowest resistance that defines the overall resistance value: in the same way the resistance is reduced the more the strength of the shade is reduced.

Resistance to alkali (ISO 2838) is used to assess, in a general way, resistance to alkaline products. Even if resistance to the standard ISO 2838 conditions is a necessary requirement for the expected use of the product in an alkaline environment, this result alone may not give sufficient confidence and some additional specific tests may be necessary (for example, resistance to soap or other cleaning

products, resistance to adhesives, etc.) This standard can equally be used, together with the resistance to solvents (ISO2837), to assess to a first approximation the varnishability when using certain acrylic varnishes or certain UV varnishes.

Resistance to solvents (ISO 2837) is used to assess to a first approximation, the ability of the print to resist solvents and certain print finishing processes (varnishing, lamination, etc.) However, the composition of the materials used can be extremely variable: complementary tests may sometimes be necessary.

For printing on chemical carbonless copy paper it is considered better to avoid using inks which are not resistant to alkali and to nitrocellulose varnish. These inks may also be less heat and rub resistant than others and their use in preprinting work that will be second impression non impact printed under difficult conditions must be avoided.

Substitute products with high resistance levels are available to order from our **Symphonie** range.

For further advice please consult our technical services.

## Lotus *Plus* references

PRODUCT CODES	☼ Standard ISO 2835	ALCALI Standard ISO 2838	ALCOHOL Standard ISO 2837	NITRO Standard ISO 2837
<b>Standard 4-colour process inks</b>				
PROCESS YELLOW 4 <sup>th</sup> unit LTP26	3	+	+	+
PROCESS MAGENTA LTP27	4/5	-	+	+
PROCESS CYAN LTP25	8	+	+	+
BLACK LTP46	7	-	-	-
<b>Special 4-colour process inks</b>				
PROCESS YELLOW 3 <sup>rd</sup> unit LTP29	5	+	+	+
LIGHT FAST YELLOW LTP54	5	+	+	+
INTENSE MAGENTA LTP35	5	-	+	+
INTENSE BLACK LTP24	7	-	-	-
DENSE BLACK LTP76	7	-	-	-
VARNISHABLE BLACK LTP75	8	+	+	+

The resistances indicated in the table correspond to the following conditions:

### ☼ Lightfastness

Standard ISO 2835

### Alkali resistance

Standard ISO 2838: 5 minutes at 20°C in 2.5 % caustic soda.

### Alcohol resistance

Standard ISO 2837: 5 minutes at 20°C in denatured ethanol.

### Nitro resistance

Standard ISO 2837: 5 minutes at 20°C

in a mixture corresponding to a solvent for nitrocellulose varnish, in volumes Acetone 10/Ethyl Glycol 10/Ethyl Acetate 30/Ethanol 30/Toluene 30.

### Lightfastness (full strength)

1 = very poor lightfastness

8 = outstanding lightfastness

### Alkali, Alcohol, Nitro

+ = resistant

- = not resistant

*This information has been carefully compiled from experience gained in the laboratory and under commercial conditions. However, the product's performance and its suitability for the customer's purpose depend on the particular conditions of use and the material being printed. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a print run. All sales are subject to our standard terms and conditions of sale.*

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