
Technical Information

DIVA - 27/05/00

DIVA

High quality and fidelity stabilised sheetfed offset process inks

Diva has been created for the printer who puts quality and fidelity of print reproduction as top priorities. A stable ink series designed specifically to give the ultimate in dot sharpness and colour dot gain balance. These qualities combined with very good gloss and rub resistance ensure that the final print has both excellent appearance and durability whilst still satisfying demands for print throughput.

Characteristics

- Outstanding dot sharpness/dot gain balance allowing the attainment of fine tone work whilst achieving high density solids at the same time, allowing a high level of image contrast.
- High gloss.
- Good rub resistance.
- High level of stability in the ink duct and on the ink roller train.
- Excellent lithographic behaviour : 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 **Diva** allow a reduction in print waste.
- Fast setting permits low spray settings and where the job design and substrate allow, **Diva** can be turned quickly. Jobs involving high coverage of ink and heavily coated

stocks will require greater care and the nature, porosity and grammage of the substrates being used must be taken into account.

- **Diva** 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 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

Diva meets the demand for a high quality 4-colour process set for the sheet fed magazine, brochure and general commercial printer. Its characteristics combined with a high level of rub resistance and of press stability, permit **Diva** to also be used for packaging. In both applications **Diva** provides high added value to the print.

Diva is seven inks (process colours and blacks) for 4-colour process printing comprising:

- 2 process yellows, one for the 4th unit and also an intense yellow with the added benefit of high lightfastness,
- 2 process magentas, standard and intense,
- 1 process cyan,
- 2 blacks, standard and intense.

This full range of products will provide a process set to meet a variety of needs; as an example, for a process set with both increased lightfastness and high intensity use the following products:

- Intense Yellow DVA30
- Intense Magenta DVA35
- Process Cyan DVA25
- Intense Black DVA24

Finishing

Diva already provides high gloss levels. However, using print finishing techniques such as film laminating or over varnishing **Diva** can provide even more added value to the final print.

Diva can be over varnished with the range of **Deltalac** water based coatings in-line or off-line. Where advice on their use is required please refer to the technical information leaflets on the **Deltalac** 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*.

For advice on all aspects of print finishing, please consult our technical services.

Substrates

Diva inks have been created to print on a wide range of gloss coated papers. **Diva** can also be used on a large number of other papers (matt, semi-matt, uncoated) or on carton board.

Diva 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 some uncoated papers) giving a risk of powdering,
- certain matt coated substrates 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 technicians or a test printing to confirm suitability before embarking on a full print run.

Machines

Diva has been specially developed to satisfy the needs of the printer using the latest high speed printing machines equipped to print 1,2,3,4,5 or 6 colours, irrespective of the dampening system used (conventional, alcohol or integrated).

Machine stability

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

Additives

Diva 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.

We recommend :

Dil'Off 700

Diluent for reducing tack and viscosity. It is very effective and no more than 3 % should be used.

Tack Off 7000

Tack reducer to be used in proportions of 3 to 5%.

Fountain solutions

Diva is compatible with a wide range of fountain solutions with and without isopropyl alcohol (0-12%). It is necessary however to choose the fountain 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 fountain additive best suited to the printing conditions and water, consult our technical services.

Plates blankets and rollers

Diva inks are compatible with all blankets and rollers and with all plates and stereotypes currently in use in offset and letterpress printing which are resistant to vegetable and mineral oils.

Washing up

Diva inks 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 **Diva** 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

Diva is supplied in vacuum packed tins of 1.0k kg and 2.5 kg. Other ink packaging available to order.

Resistances

The pigments used in **Diva** 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 product 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, 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 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 further advice please consult our technical services.

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

Diva references

PRODUCT CODES		☼ Standard ISO 2835	ALCALI Standard ISO 2838	ALCOHOL Standard ISO 2837	NITRO Standard ISO 2837
PROCESS YELLOW 4 th unit	DVA26	4/5	+	+	+
INTENSE YELLOW	DVA30	5	+	+	+
PROCESS MAGENTA	DVA27	4/5	-	+	+
INTENSE MAGENTA	DVA35	5	-	+	+
PROCESS CYAN	DVA25	8	+	+	+
INTENSE BLACK	DVA24	7	-	-	-
BLACK	DVA46	7	-	-	-

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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