Technical
Data Sheet

Marabu

Ultra *Jet* DUV-C

UV-curable Inkjet printing ink especially developed for direct printing on 3-D packaging and container. Particularly suitable for industrial singlepass printing.

Key features

- Optimized for single pass
- Superior adhesion in combination with Primer P4 + P5
- For Glassware-Dishwasher Resistance
- High Jetting Reliability
- Application Support

Field of application

Substrates

The Ultra *Jet* DUV-C substrate range includes:

- Glass*
- PET

*in combination with Pre-Treatment and Primer P5 for full adhesion properties. The adhesion properties of the Ultra Jet DUV-C inks on glass are significantly improved by use of the special Primer P5. The application of this special "auxiliary" is possible either by manually wiping it onto the entire surface with a cloth, using a spray gun or by means of a spray nozzle integrated in printing machine.

To meet the specifications of direct to container or packaging pre-treatment may also be needed for example with flame treatment or silicatization. Since all the print substrates mentioned may be different in printability even within an individual type, preliminary trials are essential to determine the suitability for the intended use.

Field of use

Ultra *Jet* DUV-C is suitable for the following printheads:

- Xaar 1001, 1002, 1003
- Konica Minolta 512 + 1024 including i series

Ultra *Jet* DUV-C was developed for the printing of food packaging for indirect food contact and is suitable for this purpose in principle. The **Ultra *Jet* DUV-C** has been formulated with regard to its intended purpose in such a way that potential migration through the printed substrate and smearing of the printed surface onto the reverse side of the overlying substrate during lay-up is reduced to a silikatisieren minimum.

Each type of migration depends on a variety of influences. The migration can be affected among other things by the processing conditions, type and thickness of the substrate. For a final assessment of the migration behavior and compliance with legal or regulatory requirements, an investigation by an external testing institute is therefore necessary, based on the printed end product in the overall process.

With this recommendation, Marabu follows the EUPIA guidelines for the indirect printing of food packaging.

(https://www.eupia.org/key-topics/food-contact-materials/good-manufacturing-practice-gmp).

No experience is available on the use of **Ultra Jet DUV-C** in the printing of food packaging with direct food contact and therefore no recommendation can be made.

Ink properties

Curing

Ultra *Jet* DUV-C ink series includes products that require different curing methods. The Cyan, Magenta, Yellow, Black and White are optimized for LED curing and pinning that is necessary in single-pass industrial printing. The best curing is achieved with 395 or 385 nm LED lamps. For the varnish a UV medium pressure mercury lamp is needed.

To achieve the final resistance that is required by some industrial applications **Ultra *Jet* DUV-C** should be cured with a medium pressure mercury lamp.

Ultra *Jet* DUV-C is a post-curing UV ink which will achieve its final adhesion and resistances after 24 hours.

The curing of the ink and varnish is generally dependent upon the kind of UV-curing unit, number, age and power of the UV-lamps. The curing depends on the printed ink film thickness, colour shade, substrate in use, as well as the printing speed, too.

Fade resistance

Only pigments of high fade resistance are used for the **Ultra *Jet* DUV-C** range. All basic shades are suited for at least 2-year vertical outdoor exposure, referred to the middle European climate and suitable substrates.

Colour Range

Basic Shades

- 170 White
- 171 White (pinning optimized)
- 428 Yellow
- 439 Magenta
- 459 Cyan
- 488 Black (pinning optimized)
- 489 Black
- 910 Varnish
- 911 Prevarnish

Auxiliaries

DI-UR Cleaner
DI-UR 3 Cleaner
P 2 Primer

For the ink changeover, it is recommended to use DI-UR for all ink-carrying components of the ink system. This cleaner has been chemically adjusted to the ink.

DI-UR 3 can be used for cleaning print heads and other ink-carrying components and should be used if any parts need to be soaked for a while. This cleaner has been chemically adjusted to the ink. Thanks to its higher viscosity, it is especially developed for printers with automatic cleaning units.

The use of the special primer P 5 significantly improves the adhesion properties of UV-curing inks (screen printing and digital printing) on glass. The application is possible by manual wiping or with the help of spraying systems.

Shelf Life

The shelf life for an unopened ink container if stored in a dark room at a temperature of 15 - 25 °C is:

- 9 months for 170, 171, 488, 910 and 911
- 12 months for 428, 439, 459 and 489

The ambient temperature may fall below this value only once for max. 2-3 days. Under different conditions, particularly other storage temperatures, the shelf life will be reduced. In such cases, the warranty given by Marabu expires.

Change-Over

Before changing over to **Ultra *Jet* DUV-C** it is generally recommended to completely drain the ink system before rinsing all ink-carrying components with cleaner DI-UR.

Depending on the current ink type and your colour match requirements there are three different options for a changeover:

- Switch & Print = full chemical and colour compatibility
- Switch & Swap = Flushing is required
- Switch & Match = Colour profiling is required for the best colour match

Please contact Marabu to confirm the necessary process for your printer

Note

Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their purpose. This is not meant as an assurance for certain properties of the products nor their suitability for each application.
Therefore, you are obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The foregoing information is based on our experience and should not be used for specification purposes. All characteristics described in this Technical Data Sheet refer exclusively to the standard products listed under "Range", provided that they are processed in accordance with their intended use and only when used with the recommended auxiliaries. The selection and testing of the ink for specific applications is exclusively your responsibility. Should, however, any liability claims arise, they shall be limited to the value of the goods delivered by us and utilized by you with respect to any and all damages not caused intentionally or by gross negligence.

Labeling

For **Ultra *Jet* DUV-C** and its auxiliaries, there are current material safety data sheets available according to EC regulation 1907/2006, informing in detail about all relevant safety data including labelling according to EC regulation 1272/2008 (CLP regulation). Such health and safety data may also be derived from the respective label.

Safety rules for UV printing inks

UV-inks contain some substances which may irritate the skin. Therefore, we recommend to take utmost care when working with UV-curable printing inks. Parts of the skin soiled with ink are to be cleaned immediately with water and soap. Please, read the notes on labels and on safety data sheets.

Marabu – Colors made for life

- Certification to international standards ISO 9001, 14001 & OHSAS 18001
- Leading-edge research and development enables us to design innovative products to meet the very latest real-world challenges of our customers
- Corporate responsibility – particularly environmental protection – is at the heart of our business. We have underlined this commitment by creating a dedicated department for product and environmental safety
- We systematically reduce hazardous substances in our products, making our standards among the highest in the industry
- Our international service and support network of subsidiaries and partners offers assistance and advice wherever you are

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