

Technical Data Sheet



Ultra Jet DUV-CP

UV-curable inkjet ink, especially developed for digital direct printing on containers and packaging. Particularly suitable for industrial single-pass printing.



Key performance factors

- Twice the printing speed and half the ink consumption compared to standard inks
- Increased contour definition
- High-opaque 170 White
- Superior color strength
- Lower set-up costs due to elimination of pinning settings
- Optimized for single-pass printing
- Outstanding adhesion to glass in combination with Primer P 4 and P5
- Ultra Jet DUV-CP is suitable for restaurant glass and offers a high level of dishwasher resistance.
- Manufactured without the use of:
BPA / barium sulphate / TPO / heavy metals

Application field

Substrates

Ultra Jet DUV-CP is suited for the following substrates:

- Glass
- PE, PP, PET
- ABS, PC, Tritan®

The adhesion of Ultra Jet DUV-CP to glass improves significantly by a pre-treatment such as flaming or silicating with PYROSIL® and the use of Primer P 5.

When working with plastics, pre-treatment with plasma or flame is essential. It is advisable to deter-

mine the most effective pre-treatment for each specific case. For optimal adhesion, pre-printing with Ultra Jet DLE-A 910 as a primer is recommended.

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.

Compatible printheads

Ultra Jet DUV-CP is preferably recommended for the following printheads:

- Xaar 501 GS8UR
- Xaar Nitrox GS6
- Xaar 2002 GS6

The compatibility of the mentioned print heads is confirmed through a material compatibility test. Moreover, an appropriate ink supply is essential for the ink jetting process which may differ depending on the application. For any inquiries, please reach out to Xaar or Marabu directly.

Characteristics

Curing

The basic shades of Ultra Jet DUV-CP require different curing methods. After printing White, the ink must be pinned with an LED lamp while Cyan, Magenta, Yellow and Black can be printed without the need for intermediate pinning.



For specific industrial applications that demand ultimate resistance, Ultra Jet DUV-CP should undergo a final curing using a medium-pressure mercury lamp.

Generally, the ink curing is influenced by the dryer's design, age, and performance, as well as the number of lamps and the ink deposit. Additionally, the color shade, the substrate, and the printing speed also have an impact on the curing process.

Light fastness

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

Color density

Compared to standard inks, Ultra Jet DUV-CP provides higher opacity. Reducing the droplet size by half can achieve similar opacity levels, as this minimizes droplet spread and substrate migration.



Figure 1 dot gain and substrate absorption
Standard ink (left), DUV-CP (right)

Print Quality

Ultra Jet DUV-CP is designed for printing high-resolution graphics, with a formulation that precisely controls droplet movement and prevents migration into the substrate, leading to outstanding edge definition and print quality.

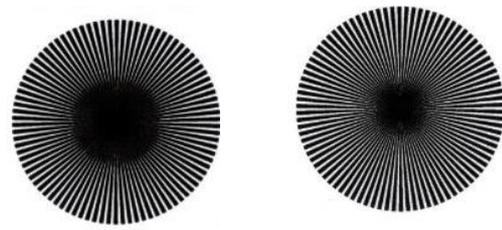
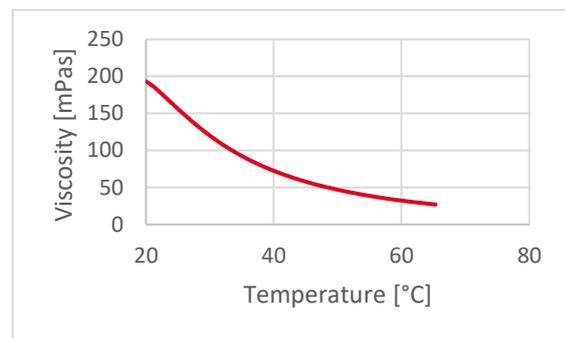


Figure 2 contour sharpness
Standard ink (left), DUV-CP (right)

Viscosity



The viscosity of Ultra Jet DUV-CP varies with temperature and can be adjusted according to the print head temperature.

Jetting Parameters

The inks are usually printed at 65 °C. For optimum printing results, an adapted waveform is necessary which can be provided by the machine manufacturer.

Range

Basic Shades

- 170 White
- 428 Yellow
- 439 Magenta
- 459 Cyan
- 489 Black

Auxiliaries

- DI-UR Cleaner
- DI-UR 3 Cleaner
- P 5 Primer





Cleaner DI-UR is used to clean all ink-carrying components when changing inks and is perfectly adjusted to the ink formulation.

Cleaner DI-UR 3 is the preferred option for rinsing, cleaning, or short-term soaking of print heads and other ink-carrying components. Due to its higher viscosity, it is particularly suitable for printers with automatic cleaning systems.

Primer P 5 significantly improves the adhesion properties of UV-curing inks on glass. It is applied either manually with a cloth, with a spray gun, or by a spray nozzle that is integrated into the printing machine.

Shelf life

Shelf life depends very much on the formula/reactivity of the ink system as well as the storage temperature. For an unopened ink container it is 1 year.

We recommend our products to be stored in a dark, dry and well-ventilated surrounding, providing an ambient temperature of 5 °C - 35 °C. Please protect from heat and direct sunlight. If storage conditions do not comply with this recommendation, the shelf life is no longer guaranteed.

Change over

Before switching to Ultra Jet DUV-CP, it is advised to empty the ink system and then rinse all ink-carrying components with Cleaner DI-UR.

Recommendation

To ensure trouble-free production, it is essential to observe and comply with the instructions provided by Marabu and the machine manufacturer. We recommend replacing the ink filters annually and carrying out the regular care and maintenance intervals.

Note

Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their use. This is not meant as an assurance for certain properties of the products nor their suitability for each application. You are, therefore, 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.

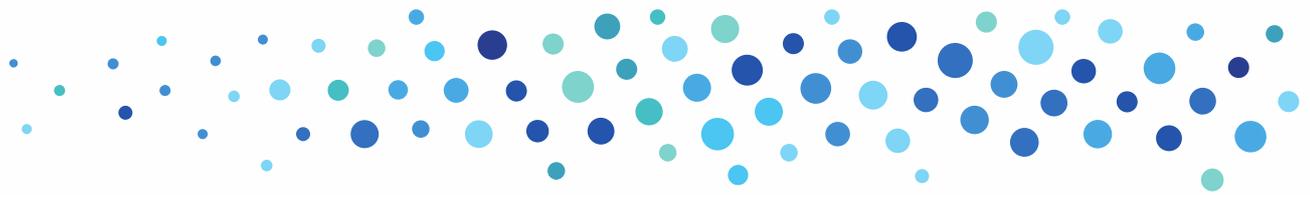
Labelling

For Ultra Jet DUV-CP 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 taking utmost care when working with UV-curable printing inks. Parts of the skin soiled with ink must be cleaned immediately with water and soap. Please read the notes on labels and safety data sheets.





Marabu - Colors made for life

- Certification according to international standards ISO 9001 and 14001
- Leading-edge research and development enable us design innovative products that 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 you support and advice wherever you are

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