



SERIES T120



Technical Data Sheet

Pad printing inks

1. APPLICATION FIELDS:

Versatile one and two component ink for rotary pad printing on

- bottle closures made of pre-treated polyethylene (PE) and polypropylene (PP)
- substrates made of polyester (PET)

Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing. Antistatic, Mould Release Agents and Slip Additives may have negative effects on adhesion, and should be detected and removed prior to printing.

2. CHARACTERISTICS:

This high glossy, physically drying and chemical cross linking pad printing ink feature

- Very fast drying properties
- good mechanical and chemical resistance

The colour shades of series T120 are

- light fast, weather resistant and high opaque
- **free** from phthalates, halogens and BPA as well as cyclohexanone, butyl glycolate and aromatic solvents

A special product test is recommended prior to production. Provided they are printed in a proper and professional way, the printing inks of series T120 can be applied to the non food contact surface of food packaging materials and articles.

The used raw materials also comply with the limits of metal elements stipulated by the actual EEC regulation *EN 71-3 (Safety of Toys), part 3* (Migration of Certain Elements).

For Gold- and Silver as well as Metallic inks it is recommended to proof if the thresholds for aluminum, copper and zinc are respected.

3. RANGE OF COLOURS:

3.1 Basic Colours:

Light Yellow	M 1	T120-2034
Medium Yellow	M 2	T120-2035
Orange	M 3	T120-3071
Light Red	M 5	T120-3072
Red	M 6	T120-3073
Violet	M 7	T120-5068
Blue	M 8	T120-5069
White	M 11	T120-1007
Black	M 12	T120-9005
Clear Base		T120-0007

3.2 Euro-Colours / 4-Colour Process Printing Inks:

For 4-colour process printing according to ISO 2846, 4 Euro-basic colours are available:

Europa-Yellow	T120-2040
Europa-Magenta	T120-3077
Europa-Cyan	T120-5077
Europa-Black	T120-9006

3.3 Special Colours/ Products:

White (high opaque)	T120-1006
Black (high opaque)	T120-9004

Bronze Varnish	T120-0003
Silver	T120-4005

4. ADDITIVES:

4.1 Thinner:

Prior to production, the pad printing ink has to be adjusted to the printing viscosity by adding thinner.

Thinner, **free from aromatic hydrocarbons**

Thinner, standard (addition: 15 - 25 %)	100VR1279
Thinner, very fast (addition: 15 - 25 %)	100VR1185
Thinner, slow (addition 5-10%)	100VR1322

4.2 Levelling Agent:

The levelling of the ink surface can be optimised by the use of a levelling agent. It must be noted that excessive addition of levelling agent can have a negative influence on the overprintability.

Levelling Agent (max. add.: 0,5 - 1%)	100VR133
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4.3 Hardener:

Hardener 100VR1433 is the standard hardener. The mixing ratio is 10 parts of ink with 1 part of hardener. A pot life of approximately 12 hours can be achieved at room temperature of 20°C.

Hardener, standard (addition 10%)	100VR1433
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Please note that the final chemical and physical resistance of the ink is only achieved after three days at room temperature of 20°C.

During processing and drying of the printed ink, the temperature should not be lower than 15°C otherwise the chemical cross linking is stopped. Also avoid high humidity for several hours after printing as the hardener is sensitive to humidity.

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While using hardener please note that multi-colour jobs have to be printed during 36 hours. The completely dried ink can not be overprinted.

5. PROCESSING INSTRUCTIONS:

5.1 Pre-treatment:

Pre-treatment of polyolefins (PE/PP) must be performed by Flame Treatment, by CORONA-discharge or by Plasma Jet application in order to ensure the adhesion of the pad printing ink to the substrate.

In case of usage of PE, surface tension needs to be at least 42 mN/m (Dynes/cm), in case of PP at least 52 mN/m (Dynes/cm).

5.2 Cliché / Printing Equipment / Pad:

T120 series can be used with all pad printing machines with clichés and pads currently used for industrial applications. However, it has to be noted that type (screen) and etching depth of the cliché, mould and hardness of the pad, the adjustment of the ink (addition of thinner and/or retarder) as well as printing speed may influence the printing result.

5.3 Drying Conditions:

The drying properties of the pad printing ink during the printing process have a decisive meaning for the printing result.

At processing temperatures of more than 25°C and at low printing speeds a drying of the ink in the cliché may happen. Not all parts of the image area will be transferred.

At room temperatures (21°C) the inks of T120 series are grip dry within 5 minutes, at a temperature of 50°C within 2 minutes and after shock heat drying within 2-3 seconds. To accelerate the ink drying onto the substrate the use of hot air blower or infrared lamps is recommended. A flame treatment is possible.

It must be noted that after heat treatment a cooling section must be installed in order to avoid that the printed parts stick together.

6. CLEANING:

Clichés, squeegees and so on can be cleaned with the RUCO Universal cleaner 100VR1442 by avoiding contact of solvents with the pad. For the cleaning of the pad please refer to the application references of the pad manufacturers. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

Universal Cleaner	100VR1442
Bio degradable Cleaner	100VR1272

7. SHELF LIFE:

A shelf life of 24 months is guaranteed when storing the inks at 21°C and in the original packaging container, excluded bronze colours and effect inks (6 month). At higher storage temperatures the shelf life will be reduced.

8. PRECAUTIONS:

For further information on the safety, storage and environmental aspects concerning these products please refer to the Material Safety Data Sheet (MSDS).

Additional technical information may be obtained from our staff of the Technical Application Department.

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