

1. APPLICATION FIELDS

Versatile one or two component ink for pad and screen printing on

- ABS (acrylonitrile butadiene styrene),
- acrylic glass,
- rigid PVC,
- pre-treated PE and PP,
- coated surfaces,
- SAN (styrene acrylonitrile),
- PA (polyamide),
- PET (polyester),
- polycarbonate,
- polystyrene,
- paper and carton

While printing on plastics such as ABS, acrylic glass and styrene tension corrosion can appear while using certain solvents.

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 glossy, physically drying and chemical reactive printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility.

The T200 series is

- **free of cyclohexanone** and
- **free of aromatic solvents**
- **free of phthalates**

Provided they are printed in a proper and professional way, the printing inks of series T200 can be applied to the non-food contact surface of food packaging materials and articles.

The T200 series can be printed with fast drying units up to 4000 pieces/ hour in pad and screen printing machines.

A special product test is recommended prior to production.

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

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

3. RANGE OF COLOURS

The basic ink mixing system consists of 10 basic colours and may be used for the mixing of a wide colour shade range. Field proven mixing formulations exist for Pantone®, HKS, RAL, NCS, etc.

3.1 Basic colours

| | | |
|---------------|------|-----------|
| Light Yellow | M 01 | T200-2000 |
| Medium Yellow | M 02 | T200-2001 |
| Orange | M 03 | T200-3000 |
| Light Red | M 05 | T200-3001 |
| Pink | M 06 | T200-3002 |
| Violet | M 07 | T200-5000 |
| Blue | M 08 | T200-5001 |
| Green | M 09 | T200-6000 |
| White | M 11 | T200-1000 |
| Black | M 12 | T200-9000 |
| Clear Base | M 0 | T200-0001 |

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

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

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|----------------|-----------|
| Europa-Yellow | T200-2002 |
| Europa-Magenta | T200-3003 |
| Europa-Cyan | T200-5002 |
| Europa-Black | T200-9001 |

3.3 Special products

| | |
|--------------------------------|-----------|
| White (high opaque adjustment) | T200-1004 |
| Black (high opaque adjustment) | T200-9002 |
| Raster Paste (add. max. 10%) | T200-0005 |
| Overprinting Lacquer | T200-0006 |

3.3.1 Bronze Colours

| | |
|-------------|-----------|
| Silver (1K) | T200-4000 |
| Gold (1K) | T200-4001 |

4. ADDITIVES

4.1 Thinner

Prior to production, the printing ink has to be adjusted to the printing viscosity by the addition of thinner.

Addition Thinner 25-35%

| | |
|--------------------------------------|--------------|
| Thinner, slow 600-1800 parts/hour | VD 100VR1453 |
|--------------------------------------|--------------|

| | |
|---|--------------|
| Thinner, standard 1800-2800 parts/hour | VD 100VR1450 |
|---|--------------|

| | |
|---------------------------------------|--------------|
| Thinner, fast 2800-5000 parts/hour | VD 100VR1440 |
|---------------------------------------|--------------|

4.2 Screen printing process

For screen printing we will recommend to use the thinner 100VR1453.

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|--------------------------------|--------------|
| Thinner, slow add (25-35) % | VZ 100VR1453 |
|--------------------------------|--------------|

SERIES T200

4.3 Hardener

The mixing addition is approx. 10 %.

At 21° C. a pot life of approximately minimum 48 hours can be achieved.

Hardener, standard (addition up to 20 %) 100VR1433

Please note that the final chemical and physical resistance as well as the maximum adhesion of the ink film will only be achieved after 36 hours at 21° C.

During processing and drying of the printed ink film 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. While using hardener please note that multicolour jobs have to be printed during 36 hours. The completely dried ink layer cannot be overprinted any-more.

4.4 Levelling Agent

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

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

5. PROCESSING INSTRUCTIONS

5.1 Pre-treatment

Pre-treatment of polyolefines (PE/PP) must be performed by Flame Treatment or CORONA-discharge. In case 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 Stencil/ Cliché/ Pad/ Printing Equipment

The inks of T200 series can be printed with all commonly available screen printing meshes. They can be used with all screen printing machines with screen printing stencils currently used for industrial applications.

During the pad printing application the inks can be used in open as well as closed systems.

However, it has to be noted that type (screen) and etching depth of the cliché, shape 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

At 21° C the inks of T200 series will be dry-to-handle within 30-35 seconds.

While adding hardener to the ink, crosslinking after application will take approximately 36 h (at 21°C). To accelerate the ink drying the use of hot air blower units or infrared lamps is recommended.

In order to avoid, that the printed parts stick together, a cooling section must be installed after heat treatment unit.

6. CLEANING

Clichés/ knife or screen/ squeegee as well as other working materials can be cleaned with the RUCO Universal cleaner 100VR1442. For the cleaning of the pads alcohol can be used or please refer to the instructions of the pad manufacturer. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

| | | |
|------------------------|----|-----------|
| Universal Cleaner | UR | 100VR1442 |
| Bio degradable Cleaner | BR | 100VR1272 |

7. SHELF LIFE

A shelf life of 12 months is guaranteed when storing the inks at 21° C in the original packing container, excluded bronze colours (9 month) 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 can be obtained from our Technical Application Department.

A.M. RAMP & Co GmbH
Lorsbacher Strasse 28
D-65817 Eppstein

Tel: +49 (0) 6198-304-0
Fax: +49 (0) 6198-304-287
E-Mail: info@ruco-inks.com
www.ruco-inks.com

