

1. APPLICATION FIELDS:

Two component pad printing ink for the print onto glass, lacquered surfaces, metal, thermosets, polyamide, polycarbonate, pre-treated polyethylene (PE) and polypropylene (PP), polyurethane and rigid PVC.

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 reactive two component screen printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility. The colour shades of T20 are light fast, weather resistant and guarantee high opacity. A special product test is recommended prior to production.

The raw materials used meet with the limits stipulated by the EEC regulation EN 71 (Safety of Toys), part 3 (Migration of Certain Elements) of December 1994.

3. RANGE OF COLOURS:

The basic ink mixing system consists of 12 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. (see 6.2).

3.1 Basic colours:

3.1.1 Standard ink series:

The basic colours of series B exhibit very good light fastness as well as higher opacity than series G.

Light Yellow	B 1	T20- 2276
Medium Yellow	B 2	T20- 2280
Orange	B 3	T20- 3735
Light Red	B 4	T20- 3717
Red	B 5	T20- 3737
Pink	B 6	T20- 3736
Violet	B 7	T20- 5602
Blue	B 8	T20- 5581
Green	B 91	T20- 6471
Brown	B 10	T20- 8204
White	B 11	T20- 1096
Black	B 12	T20- 9068
Clear Base		T20- 0069

3.2 Special Products:

3.2.1 High Opacity Formulations:

White	(high opacity)	T20- 1100
Black	(high opacity)	T20- 9068

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

For 4-colour process printing according to DIN 16538, 4 Euro-basic colours are available:

Euro-Yellow	T20- 2283
Euro-Magenta	T20- 3744
Euro-Cyan	T20- 5608
Halftone Black	T20- 9080

3.4 Bronze Colours:

see separate "Bronze Colours" leaflet

4. ADDITIONAL PRODUCTS:

Raster paste can be added to reduce "Dot Gain" and to achieve sharper dots.

Overprinting Lacquer	T20- 0068
Raster Paste (max. addition: 10 %)	T20- 0084

5. ADDITIVES:

5.1 Thinner:

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

Thinner, very fast (addition: 15 - 25 %)	VS 35 353
Thinner, standard (addition: 15 - 25 %)	VD 38 571

5.2 Retarder

Retarder will influence the drying time of the ink under different climate conditions. Retarder VZ 35 928 is a medium drying retarder, VZ 34928 is a very slow drying retarder. While using the ink under extreme climate conditions (Temperature higher than 28°C) it is recommended to use the retarder VZ 35 928 as a thinner to adjust the viscosity of the ink.

Retarder, standard (addition 5 – 10 %)	VZ 35 928
Retarder, slow (addition max. 5 %)	VZ 34 392

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It must be noted that an excessive addition of retarder may negatively influence the ink transfer and bulk good resistance, due to the slow evaporation of the retarder.

Retarder VZ 34 392 should only be used in conjunction with thinner VD 38 571 or retarder VZ 35 928.

5.3 Hardener:

Hardener 37172 is the standard hardener. At room temperature of 20° C a pot life of approximately 12 hours can be achieved.

For printing onto glass hardener 100 VR 1320 is recommended in order to achieve a better adhesion and resistance. Afterwards heat treatment at 180° C for 25 min is required.

Hardener, standard (max. addition: 20 %)	37172
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Hardener, for printing on glass (max. addition 10 %)	100VR1320
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Please note that the final chemical and physical resistance of the inks of series T20 is only achieved after 36 hours 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 crosslinking is stopped.

Also avoid high humidity for several hours after printing as the hardener is sensitive to humidity. While using hardener please note that multi-colour jobs have to be printed during 36 hours. The completely dried ink can not be overprinted.

5.4 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 %)	VM 100 VR 133
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6. PROCESSING INSTRUCTIONS:

6.1 Pre-treatment:

Pre-treatment of polyolefines (PE/PP) must be performed by Flame Treatment or CORONA-discharge in order to insure the adhesion of the UV screen printing ink to the substrate. 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).

6.2 Cliché/Printing Equipment/Pad:

The T20 ink series can be used with all pad printing machines, clichés and pads currently used for industrial applications. The printing speed is about 800 - 1.600 pieces/hour.

However, it has to be noted that 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.

6.3 Curing Conditions:

The inks of T20 series are physically drying through the evaporation of solvent within 15 min. at 20° C (grip dry). This physical drying will be accelerated at 70 – 80 ° C during 2 – 3 minutes. While multi-colour printing we recommend a intermediate drying process by infrared lamps or hot air blower.

The following chemical reaction of ink and hardener is finished at room temperature after approx. 6 days. The printed ink film has then achieved his final hardening and exhibits maximum resistance. The ink-hardener system is also reacting at temperatures below 18° C. The hardening reaction will be finished after a longer period than mentioned.

7. CLEANING:

Clichés and other working materials can be cleaned with the RUCO Universal cleaner 32 335. It must be noted that the pad does not come into contact with solvents.

For the cleaning of the pad please see to the application references of the pad manufacturers. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

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Universal Cleaner	UR	32 335
Cleaner for cleaning equipment	WR 100 VR	1240C
Bio degradable Cleaner	BR 100 VR	1272

8. SHELF LIFE:

A shelf life of 12 months is guaranteed when storing the inks at 21 °C and in the original packing container. At higher storage temperatures the shelf life will be reduced.

9. 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.

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



The above statements are accurate to our best knowledge and belief. However, due to the great number of possible influences during the manufacture of the substrate and the variation in the application process we suggest that suitability testing take place under actual conditions before production. No legally binding guarantee of certain properties or of the suitability for a definite application purpose can be derived from the above information.

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