

1. APPLICATION FIELDS:

Versatile two component ink for screen printing on acrylic glass, lacquered surfaces, metal, pre-treated polyethylene (PE) and polypropylene (PP).

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 screen printing ink exhibits very high mechanical and chemical resistance, as well as a good flexibility. The colour shades of 380 DD are 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:

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| Light Yellow | G 1 | 380 DD 2057 |
| Medium Yellow | G 2 | 380 DD 2087 |
| Orange | G 3 | 380 DD 3196 |
| Light Red | G 4 | 380 DD 3319 |
| Red | G 5 | 380 DD 3376 |
| Pink | G 6 | 380 DD 3199 |
| Violet | G 7 | 380 DD 5155 |
| Blue | G 8 | 380 DD 5156 |
| Green | G 91 | 380 DD 6165 |
| Brown | G 10 | 380 DD 8055 |
| White | G 11 | 380 DD 1025 |
| Black | G 12 | 380 DD 9012 |
| Clear Base | | 380 DD 0017 |

3.2 Special Products:

3.2.1 High Opacity Formulations:

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|-------|----------------|-------------|
| White | (high opacity) | 380 DD 102 |
| Black | (high opacity) | 380 DD 9015 |

3.4 Bronze Colours:

see separate "Bronze Colours" leaflet

4. ADDITIVES:

4.1 Thinner:

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

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

4.2 Retarder

Retarder will influence the drying time of the ink under different climate conditions. Retarder VZ 35 928 is a medium drying retarder, VZ 34 392 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.

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

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.

4.3 Hardener:

Hardener 37172 is the standard hardener. The mixing ratio is 2 parts of ink with 1 part of hardener. At room temperature of 20° C a pot life of approximately 12 hours can be achieved.

Hardener 100 VR 1431 is recommended in order to achieve a higher weather resistance. The reactivity of the hardener is lower in comparison with the hardener 37172, so the pot life will be 12 – 14 hours. The final hardening of the film will be finished after 2 days.

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| Hardener, standard (add: 50 %) | 37172 |
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| Hardener, outdoor usage (add: 50 %) | 100 VR 1431 |
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Please note that the final chemical and physical resistance of the inks of series 380 DD is only achieved after 36 hours at room temperature of 20° C.

380 DD SERIES

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. While using hardener please note that multi-colour jobs have to be printed during 24 hours. The completely dried ink can not be overprinted.

4.4 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 over printability.

Levelling Agent (max. add.: 0,5-1 %) VM 100 VR 133

5. PROCESSING INSTRUCTIONS:

5.1 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).

5.2 Stencils/Printing Equipment:

The inks of 380 DD series can be printed with all commonly available screen printing meshes. They can be used with all screen printing machines with printing speeds of about 800 – 1.200 pieces/h with screen printing stencils currently used for industrial applications. The colour mixing formulations are based on a 120-34 threads/cm mesh.

5.3 Curing Conditions:

The inks of 380 DD series are physically drying through the evaporation of solvent within 1 hour. While multi-colour printing we recommend an intermediate drying process by infrared lamps or hot air blower. The final drying will be achieved at 60 °C during 3 – 4 minutes.

6. CLEANING:

Screens and squeegees and as well as other working materials can be cleaned with the RUCO screen cleaner 32 335. 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 |

7. 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.

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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