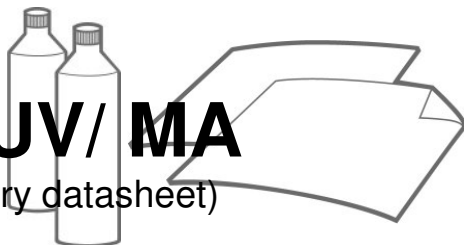


945 UV/ MA

(preliminary datasheet)



Technical Data Sheet

UV screen printing inks

1. APPLICATION FIELDS:

Universal **low migration** UV screen printing inks for the printing of containers, suitable for substrates made of

- ABS
- pre-treated PC
- PS
- PVC
- pre-treated Polyolefines such as PE/ PP
- PET, PETG

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 UV ink series 945 UV/ MA is

- low migration
- individual ink shades are chlor-free (see top 3.2.)
- barium-free

and therefore may also be used for printing on the outside of food packaging.

Thanks to the good adhesion even when printing at machine speeds up to 3600 pieces/ hour the ink series 945UV/ MA can be used for all industrial screen printing machines. They are designed in high gloss, brilliant, good levelling and printability.

The inks of the 945 UV/ MA series are constitutionally free from toxic elements and solvents. 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 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:

Yellow	M01	945 UV 20066 MA
Yellow	M02 *	945 UV 20067 MA
Orange	M03 *	945 UV 31279 MA
Red	M05	945 UV 31280 MA

Pink	M06	945 UV 31281 MA
Violett	M07 *	945 UV 51407 MA
Blue	M08	945 UV 51408 MA
Green	M09 *	945 UV 60554 MA
White	M11	945 UV 1407 MA
Black	M12	945 UV 9330 MA
Varnish		945 UV 0293 MA

* products contains chloric pigments

3.2. Chlor-free pigmented products:

Yellow	M21	945 UV 20068 MA
Orange	M31	945 UV 31282 MA
Violett	M71	945 UV 51409 MA

3.3. High opaque products:

Opaque White		945 UV 1426 MA
Opaque Black		945 UV 9338 MA

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

4-colour process printing / 4 Euro-basic colours are available:

Euro-Yellow	945 UV 20045 MA
Euro-Magenta	945 UV 31257 MA
Euro-Cyan	945 UV 51382 MA
Halftone Black	945 UV 9323 MA

4. ADDITIVES:

4.1 Thinner:

The inks of the 945 UV/ MA series are ready to use.

If further viscosity reduction is desired, UV thinner may be added. In order to increase curing, the addition of reactive thinner is recommended.

In general, no solvent-based thinners should be used due to flammable nature of the solvents.

UV Thinner (max. addition: 2-5 %) 945 UV 0014 MA

Reactive Thinner (max. addition: 2-5 %) 945 UV 0010 MA

945 UV/ MA

4.2 Adhesion Modifier:

In the case of particularly high resistance requirements the addition of adhesion modifier is recommended. However the addition of adhesion modifier to UV curable ink will lead to a processing time (potlife) of 4-8 hours at 21 °C depending on the colour shade. Higher processing temperatures will result in a shorter potlife.

Overprinting must take place within 12 hours at 21 °C in case an adhesion modifier is added.

Adhesion Modifier (max. add.: 2 - 4 %)HV 100 VR 1259

5. PROCESSING INSTRUCTIONS:

5.1 Pre-treatment:

In some cases of PET substrates the carefully flame pre-treatment or CORONA-discharge is necessary, surface tension needs to be at least 40 mN/ m.

In case of PE and PC, surface tension needs to be at least 42 mN/m, in case of PP at least 52 mN/m.

A test for suitability must always be carried out before printing.

5.2 Stencils / Printing Equipment:

Screen printing meshes between 120-31 threads/cm and 150-31 threads/cm are suitable for printing with 945 UV inks. The colour mixing formulations are based on 165-34 threads/cm mesh. However, test prints and approval of the colour are generally recommended for the respective print jobs. Any acrylic acid ester resistant squeegee material may be used.

5.3 Curing Conditions:

The varying UV absorption of the individual colours results in a range of curing properties depending on colour and opacity. All colours of the 945 UV series can be cured by the use of medium pressure mercury vapour lamps (at least 160 W/cm).

The optimum energy output is 150 - 250 Millijoule/cm², measured with Kühnast UV- Integrator under laboratory condition. UV curing is followed by a 24 hour post-cure phase after which the ink film is fully cured and has its final properties.

However, it must be noted, that low radiation intensity, excessive machine speeds or excessive film thickness can have a negative influence on the curing properties and adhesion.

Un-cured prints are considered a hazardous waste. Therefore, it is recommended to cure misprints under the UV lamp as a matter of principle. After curing, spoilage can be disposed by conventional methods and may be incinerated without causing any difficulties.

6. CLEANING:

Screens and squeegees 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. Cleaning liquids that are contaminated with UV products should not be used for the washing of working materials that were used with conventional screen printing inks. Solvents that contain UV residue are not suitable for reclamation and must be treated as a separate waste.

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:

UV inks may cause irritations and can increase the sensitivity of the skin, possibly leading to hypersensitivity. Therefore, the use of disposable gloves and protective goggles is strongly recommended.

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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