

# UltraDisc UVOD


## System Ultracolor:

	922 Light Yellow
	924 Medium Yellow
	926 Orange
	932 Scarlet Red
	934 Carmine Red
	936 Magenta
	950 Violet
	952 Ultramarine Blue
	956 Brilliant Blue
	960 Blue Green
	962 Grass Green
	970 White
	980 Black



## 4-Colour Process Shades:

	425 Process-Yellow
	428 Process-Yellow
	429 Process-Yellow
	435 Process-Red
	438 Process-Red
	439 Process-Red
	455 Process-Blue
	458 Process-Blue
	459 Process-Blue
	485 Process-Black
	488 Process-Black
	489 Process-Black











## Fluorescent Shades:

	320 Fluorescent Yellow
	323 Fluorescent Orange
	331 Fluorescent Red
	333 Fluorescent Pink
	364 Fluorescent Green

## Etch Imitations:

	913 milky-matt
	914 satin-transparent

## Further Shades:

	170 Opaque White
	171 Opaque White
	172 Opaque White
	173 Opaque White
	180 Opaque Black
	181 Opaque Black
	270 High-Gloss White
	409 Transparent Mass
	904 Special Binder
	912 Overprint Varnish

<b>UltraDisc UVOD</b>	
<b>Informacija o proizvodu</b>	
Sistem boja	UV
Sušenje	veoma brzo
Stepen sjaja	veoma sjajna
Pokrivnost	odlična
Otpornost na spoljnu temperaturu	kratka
Specijalne karakteristike	optimalna reologija
Osnovne nijanse	13
Procesne nijanse	12
Ostalo	
Specifičnost	CD-R, fluores-centna

<b>Dodaci</b>	
Razređivač	UVV 1/ UVV 2
Razređivač, srednje jačine	-
Usporivač	-
Usporivač, sporji	-
Usporivač pasta	-
Učvršćivač	-
Lak nakon štampanja, vezivo za bronzu	UVOD 904 / 912
Transparentna baza	UVOD 409
Čistač	UR 3

<b>Podloge</b>	
Polistiren (PS)	
ABS / SAN	
Samolepljiva PVC folija	
Tvrđi PVC	
Meki PVC	
Polikarbonat (PC)	I
Reljefni poliester	
PETG, PETA	
Klirit (PMMA)	
PE, PP, tretirani	
PP, netretirani	
Poliamid (PA)	
Poliacetat (POM)	
Termostabilna plastika	
Papir, talasasta lepenka	
Slojevite podloge	
Eloksirani aluminijum	
Metal	
Staklo	
Drvo	
Tekstil, sintetika	
Tekstil, pamuk	
Tipične ili dopunske aplikacije	za sve formate optičkih diskova

## Legenda

I - odgovara      m - delimično odgovara

<sup>2</sup> - predtretman sa IPA

<sup>3</sup> - predtretman plamenovanjem ili koroniranjem

' - predtretman

# Ultradisc UVOD



**UV-curable screen printing ink for all Optical Disc Formats**

**Optimized rheology, high-gloss surface, excellent print sharpness, good opacity, press-ready**

Vers. 08  
2008  
22<sup>nd</sup> Apr.

## Field of Application

Ultradisc UVOD is a UV-curable screen printing ink suitable for printing onto all optical disc formats such as CD, CD-R/RW, CD-ROM, DVD and Blu-ray with spin coatings as well as directly onto PC. Since the different spin coatings are subject to a certain post-curing, overprinting with Ultradisc UVOD should generally be carried out as soon as possible.

Compared to the DVD, the surface of the blu ray is metallised with a silicon layer. This layer serves as a humidity barrier and requires a new quality of printing ink. Preliminary trials as to the compatibility of the spin coat and the printing ink are essential.

## Characteristics

### Ink characteristics

Ultradisc UVOD colour shades are high-glossy and very brilliant at a best possible opacity.

The optimized thixotropic adjustment of the ink (rheology) guarantees an easy handling at the printing machine and prevents the ink from flowing back into the printing motif.

### Further characteristics

- excellent print sharpness during print run
- tested according to environmental chamber tests, common to the CD industry
- very good and homogeneous ink flow
- very fast curing and printability up to 6000-8100 prints/h

### Adjustment of the ink

Ultradisc UVOD is press-ready. Please stir well before printing, however.

## Resistances

UVOD basic shades has been tested as follows:

Criteria	Testing method	Result
1. adhesion	tape test with No. 4104 / 25mm	positive
2. hardness	pencil hardness as per Wolff Wilborn	3H
3. alcohol resistance	100 double rubs (500 gs) with ethanol 99,8 %	no changes
4. rub resistance	50 double rubs, dry (weight 500 gs)	no rubbing through
5. sweat/saliva resistance	reaction under test solvents after 2 h	no changes
6. solvent resistance	5 min in solvent mix and 50 double rubs (500 gs) soaked with solvent mix	no changes
7. environmental chamber test	70°C and 50% relative humidity, 96 hours	passed

## Test conditions in detail

1. Tape no. 4104/25 mm by Beiersdorf should be applied under thumb pressure and removed in one go. This test should be repeated at two different spots. If no ink is removed, the requirements for ink adhesion are met.
2. Test with an Erichsen pencil hardness device
3. 100 double rubs with a paper soaked with ethanol (99.8 %)
4. Rub resistance with a test device by Prüf bau weighing 500 gs and different rub fleeces
5. Sweat and saliva resistance as per DIN 53, reaction time of the test solvents: 2 h.

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6. Solvent resistance as per DIN 16 524, reaction time of the solvent mix for 5 min and 50 double rubs with paper soaked with the solvent mix (Test solvent: 30 vol. % ethylacetate, 10 vol. % ethyl glycol, 10 vol. % acetone, 30 vol. % ethyl alcohol + 20 vol. % toluene)
7. Environmental chamber tests carried out with an environmental test chamber from Heraeus Vötsch, HC 4020 type.

## Curing

Ultradisc UVOD is a fast curable UV ink. A UV drying unit with one medium pressure Mercury Vapour Lamp (capacity 150 - 200 W/cm) will cure UVOD.

Generally, the curing speed of the ink depends on the type of UV dryer (reflectors), the number, age and capacity of the UV tubes, the printed ink layer, colour shade, and printing speed.

## Range

### Basic shades

(See colour chart System Ultracolor)

UVOD 922	Light Yellow	UVOD 952	Ultramarine Blue
UVOD 924	Medium Yell.	UVOD 956	Brilliant Blue
UVOD 926	Orange	UVOD 960	Blue Green
UVOD 932	Scarlet Red	UVOD 962	Grass Green
UVOD 934	Carmine Red	UVOD 970	White
UVOD 936	Magenta	UVOD 980	Black
UVOD 950	Violet		

All shades are intermixable. To maintain the special characteristics of this outstanding ink range, UVOD should not be mixed with other ink types.

These 13 basic shades are included in our Marabu-ColorFormulator. They build the basis for the calculation of individual colour matching formulas, as well as for shades of the common colour reference systems Pantone®, Pantone - Metallic Guide®, HKS®, DIC®, and RAL®. All formulas are stored in the Marabu-Color Manager 2 (MCM 2) software.

All shades are based on organic pigments, therefore, the heavy metal content complies with the EEC regulations EN 71, part 3, "safety of toys" - migration of specific elements.

### High-opaque White Shades

All opaque whites have a high opacity and a viscosity adjustment suited for high printing speeds (75-135 sequences/min). They further excel owing to their best possible white shade. For a possible overprinting with waterless UV-curable 4-colour process offset shades, please use our Ultraset UVOS ink type.

#### UVOD 170 Opaque White

Glossy, suited for DVD/CD. Excellent tilt results and very good offset over-printability (up to 135 passes/min).

#### UVOD 171 Opaque White

High gloss, suited for DVD/CD. Good offset over-printability (up to 135 passes/min).

#### UVOD 172 Opaque White

Satin gloss, suited for DVD/CD. Very good tilt results and excellent offset over-printability. Smooth surface, squeegee marks and mesh structures are hardly visible (up to 135 passes/min).

#### UVOD 173 Opaque White

High gloss, suited for DVD/CD. Especially for High Speed machines with up to 135 passes. Highly reactive with best offset over-printability (up to 135 passes/min).

#### UVOD 179 Opaque White

Glossy, well-priced, excellent printability with a very good homogeneous ink flow, suited for CD/CD-R printing (up to 135 passes/min).

#### UVOD 270 High gloss White

High gloss, suited for Blu-ray discs, low radial deviation values and very good offset over-printability (up to 135 passes/min).

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Opaque Whites for rotary printing:

## **Ultrasprint UVT 170 Opaque White**

Low-viscosity opaque white developed for rotary screen printing machinery, very good offset over-printability.

## **Ultrastar UVS 170 Opaque White**

High-viscosity opaque white used in rotary screen printing or flexo printing, very good offset over-printability.

The following Opaque Black Shades are also available:

## **UVOD 180 Opaque Black**

Deep black with high opacity.

## **UVOD 181 Opaque Black, matt**

Opaque black with a very high degree of black and a mat, velvety surface. UVOD 181 is best suited for special matt effects but can also be combined with glossy varnishes for partial overprinting.

4-Colour Process Shades available:

## **Standard 4-colour process shades**

UVOD 429 Process Yellow (Yellow)  
 UVOD 439 Process Red (Magenta)  
 UVOD 459 Process Blue (Cyan)  
 UVOD 489 Process Black (Black)  
 UVOD 409 Transparent Base

(Recommended printing sequence: Y-M-C-B)

## **Highly transparent 4-clr. process shades**

UVOD 428 Process Yellow (Yellow)  
 UVOD 438 Process Red (Magenta)  
 UVOD 458 Process Blue (Cyan)  
 UVOD 488 Process Black (Black)  
 UVOD 409 Transparent Base

## **Highly transparent 4-clr. process shades with low density (light)**

UVOD 425 Process Yellow (Yellow)  
 UVOD 435 Process Red (Magenta)  
 UVOD 455 Process Blue (Cyan)  
 UVOD 485 Process Black (Black)  
 UVOD 409 Transparent Base

Compared to the highly transparent process shades, the pigmentation of this set has been reduced by 20% and is therefore best suited for printing skin tones. Both the highly transparent sets of 4 colour process shades can be overprinted as well as pre-printed.

## **Additives**

### **UVOD 904 Special Binder**

To be used for an individual addition of varnish to basic shades.

### **UVOD 912 Print Varnish**

High-gloss, transparent overprint varnish for the coating of offset and 4-colour process screen prints.

### **UVOD 913 Protection Varnish**

Satin-gloss overprint varnish for the spot varnishing of offset and screen printing 4-colour process prints.

### **UVOD 914 Protection Varnish**

Additional protection layer, screen-printed, to reduce the surface sensitivity of CD-R's as well as to generally improve the handling of them. The homogeneous surface is excellently suited for overprinting with UVCD-MW Matt White as well as all UVOD basic shades which can be used for graphic decorations.

### **UVOD-ML Matt Varnish, writable**

Best suited for the overprinting of screen and offset prints and writable with common waterproof marker pens. Furthermore, UVOD-ML can be overprinted with the UVOD basic shades.

### **UVOD 409 Transparent Paste**

Thixotropic paste to aid 4-colour-process prints, fine detail or reverse printing. When adding transparent base, the density of the 4-colour process shades may be reduced.

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## UVOD-IJL Ink-Jet Printable Varnish

Matt, press-ready inkjet varnish for the printing of CD-R's or DVD-R's and a following, professional decoration with Desktop Inkjet Printers such as Primera, Epson or Canon. The aqueous ink is hereby absorbed by the matt surface of the varnish and will dry in a short time to a rub-resistant decoration.

For UV curing, one UV station with a printing speed of up to 75 passes/min is necessary. If high-quality applications with a higher brilliance are required, it is possible to carry out a pre-print with UVOD 170 White.

## Bronzes

(to be mixed with UVOD 912)

S-UV 191	High-gloss Silver (5:1)
S-UV 192	Rich Pale Gold (4:1)
S-UV 193	Rich Gold (4:1)

The mixture of bronze paste and binder has a shelf life of approx. 6 months.

## Fluorescent shades

UVOD 320	Fluorescent Yellow
UVOD 323	Fluorescent Orange
UVOD 331	Fluorescent Red
UVOD 333	Fluorescent Pink
UVOD 364	Fluorescent Green

Mixtures of UVOD fluorescent shades with UVOD basic shades must be processed within 8 hours.

## Auxiliaries

### UVV 1 or UVV 2 Thinner

Thinner for the reduction of the ink viscosity.  
Addition: 1 - 10 % parts by weight

An excessive amount of thinner must be avoided and will reduce curing speed and surface durability of the printed ink film.

## UV-VM Levelling Agent

To rectify flow problems (e.g. bubbles etc.)  
Addition: 0.5 - 1.5 % parts by weight

The addition may reduce intercoat adhesion when overprinting.

## STM Thickening Agent

Helps to increase the ink's viscosity.  
Addition: 0.5 - 2 % parts by weight

Please stir well before printing. The use of an automatic mixing machine is recommended.

## Cleaning

Cleaners UR 3 (flame point 42°C) or UR 4 (flame point 52°C) can be used.

## Fabrics and stencils

Generally, fabrics of 140-31 to 180-27 threads can be used. Generally, a plain weave, as well as a high and uniform tension of the fabric are important (> 18 N).

### Recommendations:

Standard shades:	150-31
4-clr. process shades:	165-27/31 to 180-27
Opaque Whites:	150-31
Fluorescents, bronzes:	140-31 or 150-31
Ink-Jet Varnish UVOD-IJL:	140-31 or 140-34

For UV inks, all commercially available solvent resistant capillary films (12-18 µ) or photo emulsions and combined stencils can be used. Especially when 4-colour process printing, an emulsion layer of 5 µm maximum thickness is recommended.



## Mileage

The mileage per kg of ink with a 150-31 fabric is approx. 6,000 to 7,000 CD's if the whole surface is printed, or up to 25,000 CD's with text (coverage e. g. 25%).

## Shelf Life

Shelf life depends very much on the formula/ reactivity of the ink system as well as the storage temperature. It is one year for all UVOD colour shades for an originally closed ink can if stored in a dark room at a temperature of 15-25°C.

Under different conditions, particularly higher storage temperatures, the shelf life is reduced. In such cases, the warranty given by Marabu expires.

## Labelling

For our ink type Ultradisc UVOD and its additives and auxiliaries, there are current Material Safety Data Sheets according to EC-regulation 91/155 covering in detail all relevant safety data including the labelling according to the present EEC regulations as to health and safety labelling requirements.

Such health and safety data may also be obtained from the respective label.

## Safety regulations for UV screen printing inks

We recommend that UV screen printing inks and auxiliaries should be handled with particular care. Follow the instructions given on the labels and in the Material Safety Data Sheets.

## Note

Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their use.

This is not meant as an assurance for certain properties of the products nor their suitability for each application. You are, therefore, obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The selection and testing of the ink for specific application is exclusively your responsibility.

Should, however, any liability claims arise, such claims shall be limited to the value of the goods delivered by us and utilised by you with respect to any and all damages not caused intentionally or by gross negligence.