

Maragloss GN



Screen Printing Ink for PVC self-adhesive foils, rigid PVC, polystyrene (PS), and acrylics (PMMA), paper, pasteboard, and carton

Glossy, fast drying, very good mesh opening, weather-resistant

Vers.02
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Field of application

Substrates

The screen printing ink Maragloss GN is suited for use on rigid PVC, PVC self-adhesive foils, polystyrene (PS), acrylics (PMMA), as well as strong papers (limitedly also for Chromolux). GN is not suitable for printing onto plasticized PVC.

We recommend preliminary trials on injection moulded parts of polystyrene or acrylics as internal material tensions, especially at the rim area or at material breaks, could lead to ink breaks.

Since all the print substrates mentioned may be different in printability even within an individual type, preliminary trials are essential to determine suitability for the intended use.

Field of use

Maragloss GN displays a very good mesh opening and printability for printing speeds up to 600 prints/h. GN is therefore suitable for manual printing, semi-automatic up to three-quarters automatic printing.

Maragloss GN contains mild solvents and is therefore suitable for substrates sensitive to tension cracks such as polystyrene and acrylics. White and black shades can also be processed with a spray gun, but preliminary trials are absolutely necessary for this process.

We recommend to filter the thinned press-ready ink (25 µm screen) before processing as otherwise bubbles may arise in the ink film.

Characteristics

Drying

Physically drying, dries at 20°C within 20 min (for over-printability), at 50°C in a tunnel dryer stackable within 60 sec..

The times given above require a normal ink film thickness (e.g. fabric 120-34), a good drying power, and single-colour printing.

An extended drying time is necessary when over-printing the ink, and block resistance is reduced by approx. 20%. The addition of plasticizer WM 1 (2-5%) extends the drying time and reduces the block resistance.

Fade resistance

Pigments of excellent fade resistance according to DIN standard 16525 are used for the Maragloss GN 4-colour process shades as well as for white and black.

Best outdoor results are achieved by over-coating the whole surface with Protection Varnish GN 911. Shades mixed with a high percentage of Transparent Base GN 409 (>30%), have a reduced fade and weather resistance. The fade resistance of the ink is also reduced as the density of the printed ink film decreases.

The pigments used are resistant to solvents and plasticizers.

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Stress resistance

After proper and thorough drying, the ink film exhibits outstanding adhesion as well as rub, scratch, and block resistance. If 4-colour process prints are subsequently vacuum-formed (e.g. on PS), we recommend preliminary trials.

GN exhibits a normal chemical resistance of 5 double rubs to alcohols and other usual cleaners (e.g. window cleaner) and to premium grade petrol lead-free.

For a higher chemical resistance, we recommend to overcoat with the more resistant Marastar SR 910 Varnish (not suitable for PS). For a higher rub and abrasion resistance, especially in double printing into the stack, we recommend to overcoat with Printing Varnish GN 910 or GN 911.

Range

Standard shades acc. to EURO Scale

GN 429	Process Yellow (Yellow)
GN 439	Process Red (Magenta)
GN 459	Process Blue (Cyan)
GN 473	Process Black (Black)

For adjusting the individual densitometric density of the basic shades, Transparent Base GN 409 or ink concentrates for 4-colour process prints in Yellow 429, Magenta 439, and Cyan 459 are available (see separate technical data sheet).

Further shades available

GN 070	White
GN 170	Opaque White
GN 073	Black

It should not be mixed with other ink types to maintain the special characteristics of this outstanding ink range.

The pigments used in the below mentioned standard shades, based on their chemical structure, correspond to the EEC regulations EN 71/part 3, safety of toys - migration of specific elements. All colours are thus suited for printing onto toys.

Additives

Printing Varnish, glossy:	GN 910
Printing Varnish with UV protection:	GN 911
Transparent Base:	GN 409
Bronze Binder:	GN 910
Ink concentrate Process-Yellow:	429
Ink concentrate Magenta:	439
Ink concentrate Cyan:	459

Bronzes

(to be mixed with Bronze Binder GN 910)

S 181	Aluminium (6:1)
S 182	Rich Pale Gold (4:1)
S 183	Rich Gold (4:1)
S 184	Pale Gold (4:1)
S 186	Copper (2:1)
S 190	Aluminium, rub-resistant (8:1)

Bronze mixtures cannot be stored and must be processed in the course of 12 hours. Pale Gold S 184 and Copper S 186 reduce the processing time to 8 hours due to their chemical structure.

All figures in brackets are guidelines which can be changed according to opacity and ink price. The ratio figures in brackets refer to the mixture Bronze Binder GN 910 to bronze powder or bronze concentrate whereas the first figure is standing for the parts by weight of bronze binder GN 910. Due to the larger grain size of bronze pigments, we recommend a fabric of 120-34 or 120-31 or coarser.

All bronze shades are included in a separate bronze shade card.

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Furthermore, 3 high-gloss bronze concentrates are available to be used by mixing them with bronze binder GN 910 (see separate technical data sheet "High-Gloss Bronze Concentrates").

- S 291 High-gloss Silver (5:1 – 10:1)
- S 291 High-gloss Rich Pale Gold (5:1 - 10:1)
- S 293 High-gloss Rich Gold (5:1 - 10:1)

Due to the smaller pigment size compared to bronze powders, it is possible to process also finer fabrics of 140-31 to 150-34 for an acceptable price.

Auxiliaries

Thinner:	QNV
Thinner, fast and mild:	PSV
Spray Thinner:	7037
Spray Thinner for polystyrene:	PSV
Retarder:	SV 1
Retarder slow:	SV 9 (5% max.)
Retarder paste:	VP (5-20%)
Extender:	ST 1 (30% max.)
Cleaner:	UR 3
Matting paste:	ABM (1-20%)
Matting powder:	MP (1-4%)
Plasticizer:	WM 1 (2-5%)
Printing modifier:	ES (0.5-1%)

To adjust the printing viscosity, it is generally sufficient to add 10 - 15% thinner to the ink. For the use on polystyrene or other plastics sensitive to tension cracks, we recommend the mild Thinner PSV.

To produce a retarding effect for slow printing sequences, Retarder SV 1 is added to the thinner proportionately (approx. 50%).

For the printing of very fine details, it is also possible to use Retarder Paste VP (5-20%) or Retarder SV 9 (5% max.). For an ink mixture containing retarder, only thinner without retarder should be used for additional thinning.

For spray varnishing, we recommend the fast Thinner 7037 or mild PSV (30-40).

By adding ABM Matting Paste (1-20%) or 1-4% MP Matting Powder (for White GN 070 or 170, 2% max.), the glossy effect of GN can be reduced decreasing the opacity at the same time.

Plasticizer WM 1 (2-5%) is recommended if the printed ink film has to be particularly flexible. This is important for thin substrates tending to curl, as well as for PVC self-adhesive foils with removable adhesive (risk of edge curling) and if the printed ink surface will be cut or die-cut. The use of Plasticizer WM 1 reduces the drying speed.

Printing Modifier ES contains silicone. It can be used to rectify flow problems on critical substrates by adding 0.5-1% max. to the ink. If an excessive amount of printing modifier is added, flow problems are increased and adhesion may be reduced, especially when overprinting.

Fabrics and stencils

All types of commercially available fabrics and solvent-resistant stencils can be used.

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Cleaning

It is recommended to clean the screens with Cleaner UR 1 immediately after use.

Recommendation

The ink should be stirred well before printing.

Labelling

For our ink type Maragloss GN and its additives and auxiliaries, there are current Material Safety Data Sheets according to EC-regulation 91/155 informing in detail about 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.

The ink has a flash point between 50°C and 100°C.

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.