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Novaflash® Metallic PASTE

Two-component Gold and Silver Pastes with very high brilliance and excellent metallic effect

Spot inks for sheetfed offset

Product features

- Novaflash® Metallic PASTE are mineral oil based two-component metallic inks for paper and board, based on leafing gold and aluminium pigments. The series includes the colour shades Rich Gold 2205, Richpale Gold 2210, Pale Gold 2215 and Silver 6 S 103.
- Novaflash® Metallic PASTE are ideally suited for straight-line printing on all multi-colour printing presses. The advantages of the series are very high brilliance and an excellent metallic effect with very good printability.
- Due to the leafing properties of the gold pigments used, Novaflash® two-component metallic inks have a low rub resistance. This can be improved by the application of an adequate oil-based varnish or water-based coating.

Advantages of Novaflash® Metallic PASTE

- Excellent metallic effect.
- Very high brilliance.
- Very good printing performance.
- Ideally suited for gloss coated papers and board.

K+E®

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Novaflash® Metallic PASTE

		Fastness properties			Printing properties								
		Alcohol	Solvent mixture	Alkali	Halftone printing	Gloss	Setting	Oxidative drying	Rub resistance	Rapid further processing	Suitability for gloss coated papers/board	Suitability for uncoated papers/board	Suitability for matt coated papers/board
Novaflash® Metallic PASTE	**Product code**				4	4	4	4	1	3	7	3	5
Rich Gold 2205 PASTE	**VI89-ASX***	+	+	-									
Rich Pale Gold 2210 PASTE	**VI89-ASY***	+	+	-									
Pale Gold 2215 PASTE	**VI89-ASZ***	+	+	-									
Silver 6 S 103 PASTE	**VI89-B63***	+	+	-									
Gold and silver varnish	**Product code**												
Gold Varnish 154 284	**VI89-0AA***	+	+	+									
Silver Varnish 6 S 102	**VI89-0BB***	+	+	+									

1 = Characteristic weakly expressed 7 = Characteristic strongly expressed

Fastness properties according to ISO 2836: + = Resistance provided - = Resistance not provided

The assessment of the colour properties was made under standardised printing conditions. In individual cases, under special conditions, as in printing with very high ink densities, the classification of certain properties may be different.

Substrates

Ideally suited for gloss coated papers and board, suited for matt coated paper and board.

The substrate selection has an important influence on the achievable metallic effect. Depending on the absorption and the surface conditions, the metallic effect can be reduced more or less. Optimal results are normally achieved on coated substrates, however, care must be taken that the coated stock is of good quality.

Some substrates may look attractive, but cause strong penetration of mineral oil and binding agents. The result may be a large amount of unwetted metal pigments on the print surface, which may cause drying and abrasion problems.

To achieve best possible results on a less than ideal substrate, an adequate primer can be pre-printed in a sufficient film thickness. This should be checked before commercial production starts.

Storage and shelf life

Metallic inks should be stored at temperatures of around 25 °C, as high temperatures may cause oxidation which could lead to a decrease in brilliance. The tins should be kept closed whenever possible, as unnecessary opening results in oxidation.

Used ink from the duct must not be refilled into the tin. Mixed fountain solution can react with the aluminium particles of the metallic ink and create gas.

Meeting the recommended storage conditions, Novaflash® Metallic PASTE will remain stable for a minimum of 12 months from the date of manufacture. Mixtures are not stable and mixing should therefore take place directly before the printing process starts.

You are welcome to contact us for further information.

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Fountain solution

We recommend using Hydrofast® GS 307, dosed at 2-3% with additional 8% Isopropanol.

Additives

To improve drying, 3-5% drying paste Novaspot® 3107 may be added. However, this should be introduced immediately before commercial production starts, because the longer the resting time the greater the chance of oxidation and the more the brilliance will suffer.
If the substrate requires the tack to be reduced, up to 3% printing oil L may be added.

Exceptions

Printing Inks mixed from these pastes are not to be used for food packages without functional barrier.

Special Notes
Mixing ratio

A two-component metallic ink achieves the best metallic effect; provided that the mixing takes place directly before the printing process starts - as the inks oxidate with oxygen in the air, which cause a reduction of the metallic effect and the printed ink appears dirtier.
Gold inks are mixed in the ratio 1:1, to improve the press behaviour and the intermediate adhesion with varnishes the varnish quantity can be increased up to 1:2 (1 part Gold Paste – 2 parts Gold Varnish 154 284) depending on the application - or in special cases up to 1:3. The amount of Gold Paste in mixtures must not exceed 50%.

Silver inks are mixed in the ratio 1:2 (1 part Silver Paste – 2 parts Silver Varnish 6 S 102). As required, the quantity of varnish can be also be increased.

Print finishing

Within the print finishing, attention must be paid to the fact that metallic inks have restricted intermediate adhesion to varnish systems and other components. This is caused by the leafing characteristics of the metallic inks, which means that the metallic particles in combination with the fountain solution travel to the surface of the printed ink film. As mentioned above15-20 % gold varnish 154 284 may be added into the gold ink and 15-20 % silver varnish 6 S 102 may be added into the silver ink to improve the intermediate adhesion.

With finishing methods such as sealing and laminating the same additives in the mentioned dosages can be used. The finishing process must first be coordinated with the finishing company.

Important for a successful finishing is the drying status of the ink. Please note, that the time until the ink is completely dried depends upon various factors e.g. substrate and printing conditions (water feed). To evaluate the point at which finishing can be started, measuring the surface tension can be helpful. The surface tension should not be less than 35 mN/m.

In many cases it is recommended to use a primer e.g. Novaset® 4510/40 Offline-Primer from Flint Group. In any case a finishing test should be made before commercial production starts.

Any kind of finishing causes a reduction of the metallic effect.

Resistance Characteristics

In general metallic inks do not have alkali fastness, but they can actually be varnished with a suitable water-based coating. For overprint varnishing, we recommend Novaset® 4216/40 Gloss Coating.

Gold shade metallic inks are a copper-zinc composition with different formulations depending on shade. These compositions can interact with different raw materials which can cause undesirable colour shade deviations up to the complete elimination (greening) of the metallic pigments. It is recommended to evaluate all components involved into the production process, even after the printing process on it's own.

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Printability

Environmental influences in the print room are of major importance. The temperature and air humidity can influence the ink balance and thus the printability.
Ideally, systems for the control of air humidity and temperature should be installed in the area around the printing press. The printing press itself should not be exposed to direct sun light.

The pH-value of the fountain solution must be in a neutral range in order not to reduce the brilliance and drying. A pH-value around 5.5 is recommended. An addition of up to 8% Isopropanol has a positive effect on drying and printability.

Metallic inks can be printed wet-on-wet with other inks: the tack of the following inks should be lower, and the ink should not be high-gloss. The metallic ink should be printed in the 1st unit, the following overprint ink should be printed – if possible – in the last printing unit. As overprint Black we recommend Novavit® Black 133 RTW.

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