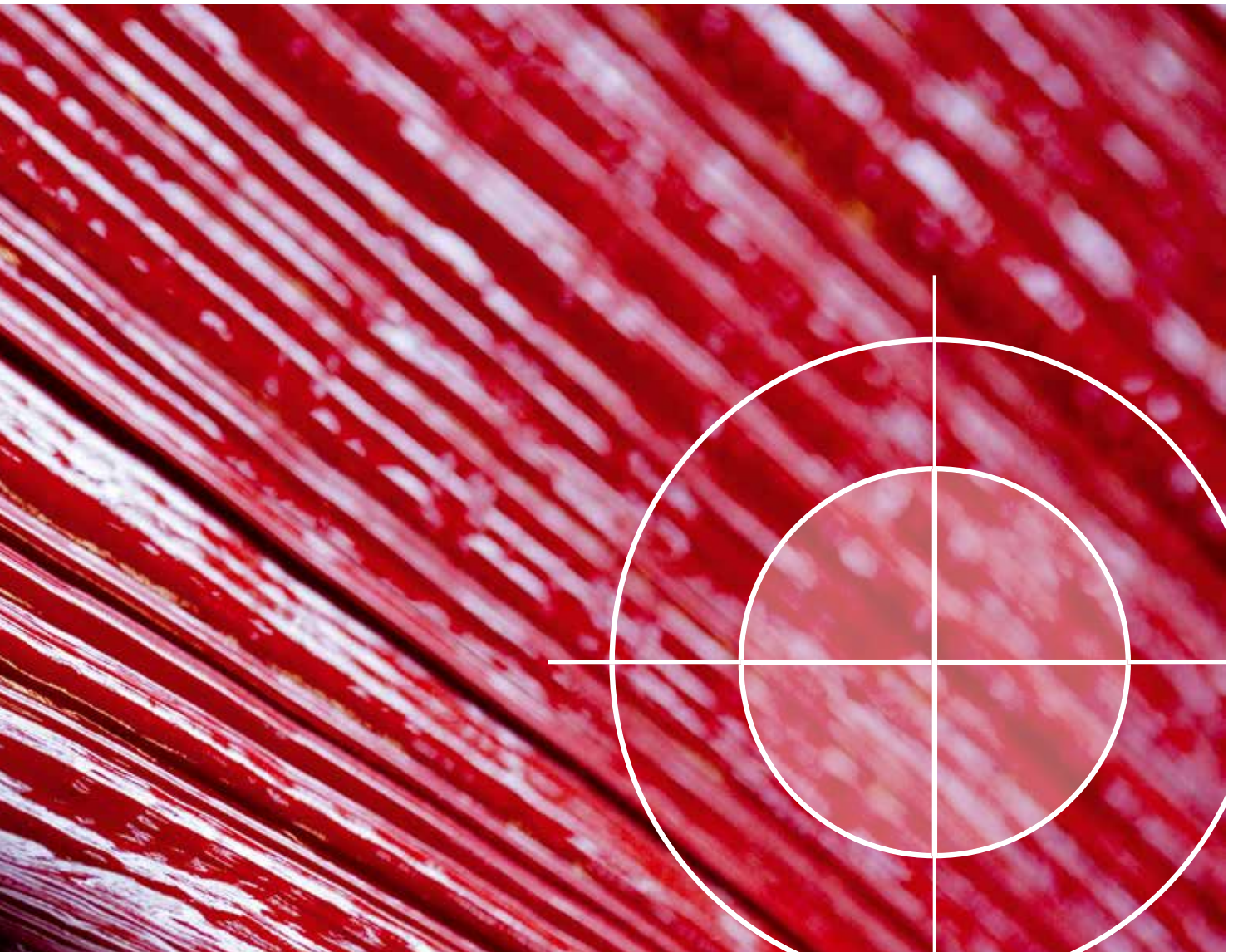




ZELLER+GMELIN

Metal Deco

High-Quality Printing Inks



Zeller+Gmelin

The Safe Alternative

For many decades the name Zeller+Gmelin has been standing for highest quality and customer orientated solutions. We are a medium-sized independent company with subsidiaries and trading partners all over the world. In close cooperation with our customers we develop individual solutions for sophisticated tasks.

Zeller+Gmelin was founded in 1866 and has been entirely in private hands since then. This grants the company independence, flexibility and customer focus. Also the headoffice is still located on the foundation site in Eislingen/Fils between Ulm and Stuttgart, Germany.

Since 1970 radiation curing has been the special focus of our research and development activities. Today we are among the leading manufacturers of these products worldwide. The focus of development is on the markets packaging, labels, commercials and particularly on metal decoration.

Because of our longstanding experience Zeller+Gmelin offers today high-quality printing inks for metal decoration, which are proven and tested in production environments. We offer both conventional as well as UV curing ink systems.

Being a technically oriented company it is our goal to give optimal support to our customers for their work. Therefore we do not only offer high-quality products but also comprehensive advisory service. For all questions concerning the printing process you will find a competent contact person with us.

To support our customers we have established a technical service centre with practically experienced application engineers. We provide help for all challenges of printing technology and for special requirements. In addition we install in cooperation with our customers tailor-made colourimetric systems and ink mixing stations and train your employees.

With high-quality, sophisticated products and a flexible, independent company structure Zeller+Gmelin today is the safe alternative for the metal decoration market.

Metal Deco

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Standardised Ink Mixing Systems

for Metal Decoration

Unified colour standard for all premium ink systems

All our 'Metal' premium ink series have the same, unified pigmentation and colouring. Mixing formulations are directly interchangeable 1:1 between our ink series, regardless of whether *MetalDry* (heat-drying), *MetalCure* (UV-Hg) or *MetalFlash* (UV-LED) is being processed. Colour mixtures can be perfectly standardised when using different drying processes and machine configurations. This gives you unrivalled flexibility in machine utilisation and a smooth changeover time when gradually switching to other production processes.

Mixing with monopigmented ink mixing systems

Years of experience make it possible: Zeller+Gmelin offers you monopigmented colour mixing systems with high colour strength for metal decoration. By having your own ink mixing facility with monopigmented base inks you will be more flexible and independent in the future and can react more quickly to customer demands.

Advantages

- + PANTONE® shades are easier to match
- + Ink-mixes have a higher colour strength and are purer, because only the really needed pigments are used for the mixture
- + The higher colour-intensity makes printing with reduced ink lay-down possible
- + Reduced dot gain
- + More flexibility when adjusting colour strength for solids or fine texts.
- + Less colour deviations between reference sample and mixed ink under changing light sources (metamerism)
- + The colour-communication between ink manufacturer and his customer will be easier and faster by the usage of monopigmented mixing systems
- + Mixing recommendations are available for all PANTONE® mixed shades
- + Ink dispensing, mixing and measuring systems with different expansion levels are available
- + Reduction of stock expenses
- + Lower disposal charges for leftover inks

In our production plants we work with the same monopigmented ink systems. This allows a fast and effective colour communication between ink manufacturer and printer.

Regardless whether PANTONE® spot colours or HKS colours have to be mixed, with our high-pigmented ink-mixing systems you will always get the best possible result. Even colour shades that are independent of a specific matching system can be optimally reproduced.

Opaque White Systems

for Metal Decoration

Opaque white systems play an important role in metal decorating. For all our ink series we have currently 3 standard opaque white types in our product range:

- + non-dyed white for mixing
- + violet dyed, for clear coated metals
- + blue dyed, for gold coated metals

Generally we are able to develop any specific type of dyed opaque white to customer specifications.

In addition to the general properties of the ink series our opaque white types stand out with the following characteristics:

High degree of whiteness

The opaque white variants have a high degree of whiteness. In many cases it is possible to reduce the number of white printing stations while still achieving the same result.

Low yellowing

Our opaque white developments are generally low yellowing and have only a very slight tendency to yellowing.

High opacity

The high opacity of our covering whites makes it possible to achieve the desired look with a low ink lay-down. This has advantages for further processing or forming and minimizes the risk of ink cracking and frosting.

Optimal viscosity

The viscosities of our opaque white types are optimally adjusted for the application. Nevertheless the inks are pumpable and therefore suitable for automatic ink supply systems.

PFOA/PFAS/PTFE-free and BPA-free, highly resistant

All types of opaque white are formulated without PFOA/PFAS/PTFE and Bisphenol-A and do not contain optical brighteners. In addition they are resistant against spirit, nitro and alkali (according to DIN 16524).



METALDRY O30

Conventional Drying Premium Ink Series

The new generation of the conventional drying **MetalDry O30** series is formulated without mineral oil and PFOA/PFAS/PTFE. It has high colour strength, is flexible and very low yellowing. The ink series does neither show skin formation in the duct or in the can nor on the rollers, not even after longer down-times of the press. Of course it has all necessary resistances for metal decoration.

The good ink transfer in the press results in a high gloss, flexible ink film with very good mechanical and chemical resistances and excellent deep-drawing properties.

The series is suitable for printing on coated and uncoated metal substrates in dry-offset (pre-formed containers) or sheet-fed offset. Therefore it is not only suitable for the direct decoration of aluminium tubes and monobloc aerosol cans but also for the production of metal packaging in sheet-fed offset.

Properties

- + Formulated without mineral oil and PFOA/PFAS/PTFE
- + Low-yellowing
- + No skin formation in the can or duct
- + Excellent formability and deep-drawing properties
- + Suitable for retorting at 131 °C/30 min or 121 °C/60 min
- + Resistant against solvent mixture (DIN 16524)
- + Resistant against topcoats
- + Fast drying (around 7 min at 170 °C)
- + Temperature resistance at least 180 °C/10 min
- + Very high intensity
- + Very good adhesion on coated and uncoated substrates
- + Very good scratch resistance

Applications

- + Monobloc aerosol cans
- + Aluminium tubes
- + 2-piece cans and 3-piece cans
- + Food cans
- + Technical packaging
- + Crown corks and screwcaps
- + Twist-off closures
- + 3-piece aerosol cans
- + Long caps



METALCURE U30

UV Curing Premium Ink Series

The new generation of the UV curing **MetalCure U30** series has very high colour strength and is distinguished by its excellent flexibility. Of course it has all necessary resistances for metal decoration.

The good ink transfer in the press results in a high gloss, flexible ink film with very good mechanical and chemical resistances and excellent deep-drawing properties.

The ink allows excellent deep-drawing results, which however depend on many influencing factors and not only on the printing ink. For example the used basecoat has a strong influence on the deep-drawing properties. The formability of the **MetalCure U30** inks is so good, that it is in principle also useable for monobloc aerosol cans.

The series is suitable for printing on coated metal substrates in sheet-fed offset.

Properties

- + **PFOA/PFAS/PTFE-free and BPA-free**
- + Excellent formability and deep-drawing properties
- + Suitable for retorting at 131 °C/30 min or 121 °C/60 min
- + Resistant against solvent mixture (DIN 16524)
- + Resistant against topcoats
- + High reactivity, therefore very good through curing
- + Temperature resistance at least 180 °C/10 min
- + Very high colour strength
- + Excellent printing properties on the press
- + Very good adhesion on coated substrates
- + Very good scratch resistance

Applications

- + 2-piece cans and 3-piece cans
- + Food cans
- + Technical packaging
- + Crown corks and screwcaps
- + Twist-off closures
- + 3-piece aerosol cans





MetalCure FCM U31

UV Curing Premium FCM Ink Series

The **MetalCure FCM U31** series sets new standards for the production of food packaging in metal decorating. The modern formulation contains significantly fewer migration-critical substances than previous ink series and offers high safety reserves when the highest demands are placed on the packaging.

In terms of print performance, it meets the same high standards as all our metal decorating ink series. Naturally, it has all the resistance properties required for metal decorating.

The good ink transfer in the press produces a high-gloss, flexible ink film with very good mechanical and chemical resistance.

The series is suitable for printing on coated metal substrates in sheet-fed offset printing.

Properties

- + State-of-the-art FCM formulation with high safety reserves
- + Excellent formability and deep-drawing properties
- + Heat sterilisable at 131 °C/30 min or 121 °C/60 min
- + Resistant against solvent mixture (DIN 16524)
- + Resistant against topcoats
- + High reactivity, therefore very good through curing
- + Temperature resistance at least 180 °C/10 min
- + Very high colour strength
- + Excellent printing properties on the press
- + Very good adhesion on coated substrates
- + Very good scratch resistance

Applications

- + 2-piece cans and 3-piece cans
- + Food cans
- + Technical packaging
- + Crown corks and screwcaps
- + Twist-off closures
- + 3-piece aerosol cans



MetalFlash FCM LED U531

LED-UV Curing Premium FCM Ink Series

With its high reactivity, the **MetalFlash FCM LED U531** series allows the use of particularly energy-saving LED UV lamps.

Despite the low energy input, the curing is comparable with classic UV inks. The ink series is suitable without restrictions for the production of food packaging with high safety reserves.

In terms of print performance, it meets the same high standards as all our metal decorating ink series. Of course it has all the resistance properties required in metal decorating.

The new LED ink series is characterised by homogeneous press performance, a large water window, very good flow properties and outstanding printability.

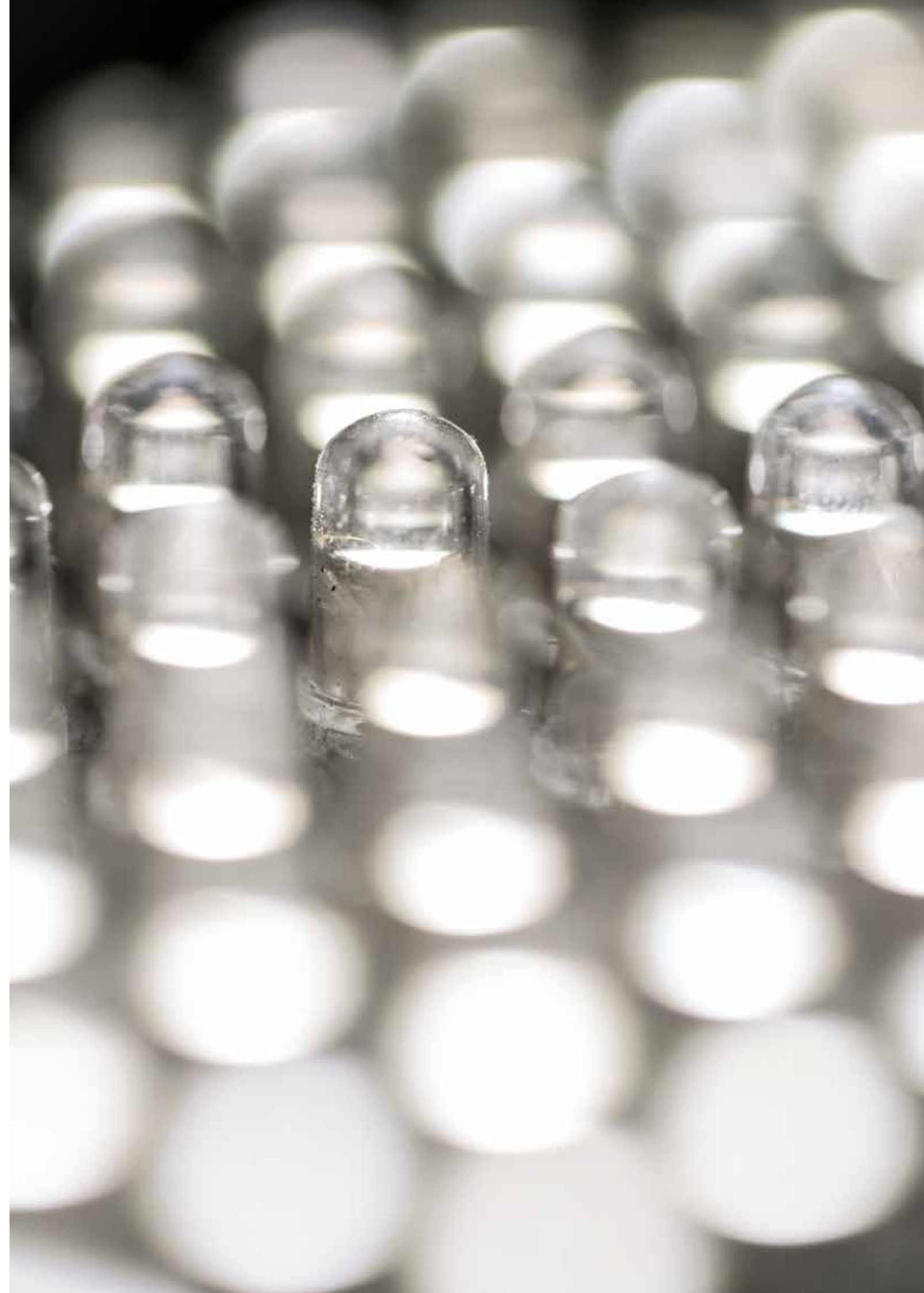
The series is suitable for printing on coated metal substrates in sheet-fed offset printing.

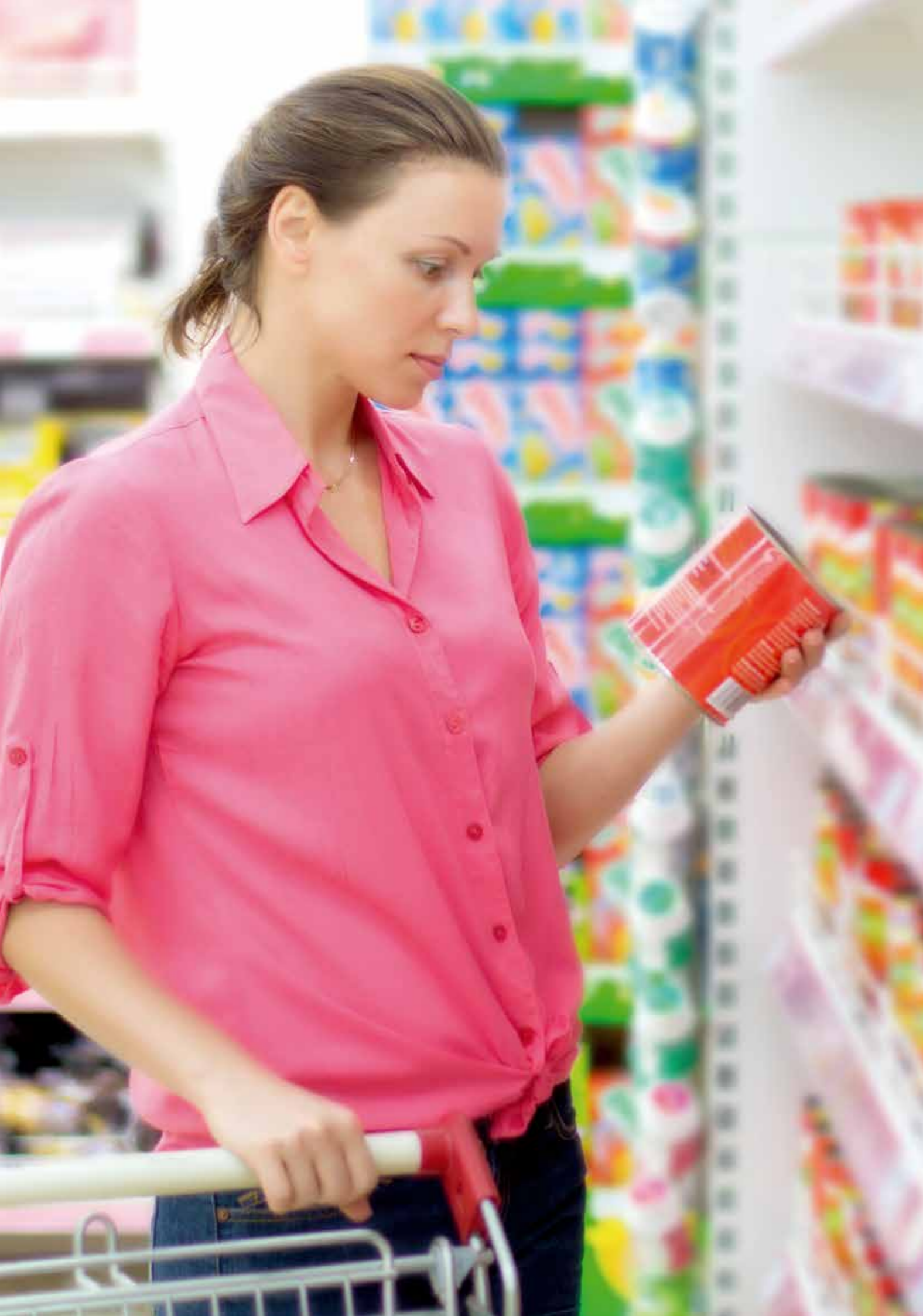
Properties

- + Specially developed for processing with energy-saving LED UV lamps in the 385 and 395 nm wavelength ranges
- + State-of-the-art FCM formulation with high safety reserves
- + Excellent formability and deep-drawing properties
- + Suitable for retorting at 131 °C/30 min or 121 °C/60 min
- + Resistant against solvent mixture (DIN 16524)
- + Resistant against topcoats
- + High reactivity, therefore very good through curing
- + Temperature resistance at least 180 °C/10 min
- + Very high colour strength
- + Excellent printing properties on the press
- + Very good adhesion on coated substrates
- + Very good scratch resistance

Applications

- + 2-piece cans and 3-piece cans
- + Food cans
- + Technical packaging
- + Crown corks and screwcaps
- + Twist-off closures
- + 3-piece aerosol cans





UV Lacquers

for Metal Decoration

Zeller+Gmelin offers you a complete, well-matched range of printing inks, protective coatings and effect coatings. This gives you a tried and tested complete package from a single source.

Protective Coatings

Our UV-curing protective coatings enable particularly sustainable production.

Thanks to UV curing, our products are completely emission-free and require considerably less energy than conventional protective coatings. This is particularly true for our highly reactive LED UV protective coatings, which use energy-efficient LED UV lamps for curing.

Some of our protective coatings can be overprinted and can therefore be used several times as set-up plates when adjusting the press. Time-consuming sorting out of the coated sheets is no longer necessary.

In addition, the excellent overprintability in combination with our effect varnishes enables spot varnishing with eye-catching matt/gloss effects.

All our UV protective coatings have the highest mechanical and chemical resistance and are suitable for the production of food packaging (FCM).

Special Applications

For spot and effect coatings, we offer a selection of gloss and matt coatings that are applied with standard inking units. Our matt lacquers, for example, have an excellent matt effect despite economical coating thicknesses.

Our effect coatings also have all the required resistances and are suitable for use on food packaging (FCM).

UVALUX U37

UV Curing General-Line Ink Series

The **UVALUX U37** series is a UV curing printing ink series with intentionally reduced resistances and is not suitable for retorting. It was specifically developed for General-Line applications such as decorating of technical packaging which is not retort processed.

UVALUX U37 has high colour strength and is distinguished by its excellent flexibility. The good ink transfer in the press results in a high-gloss, flexible ink film with very good mechanical and chemical resistances and excellent deep-drawing properties.

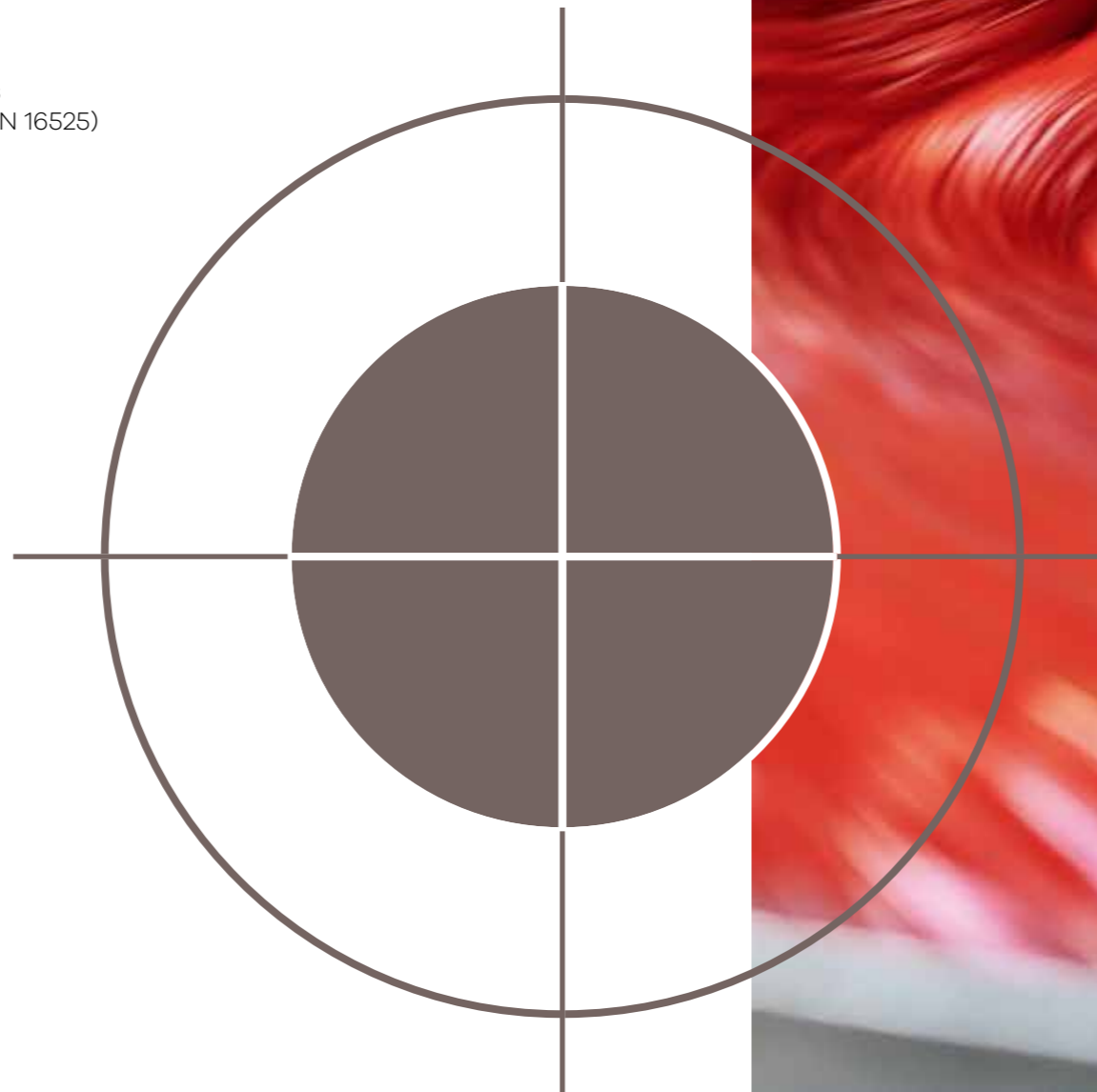
The series is suitable for printing on coated metal substrates in sheet-fed offset.

Eigenschaften

- + Excellent formability and deep-drawing properties
- + Includes inks with light resistance of less than 6 (DIN 16525)
- + Not suitable for retort processing
- + Resistant against solvent mixture (DIN 16524)
- + Resistant against topcoats
- + High reactivity, therefore very good through curing
- + Temperature resistance at least 180° C/10 min
- + Very high colour strength
- + Excellent printing properties on the press
- + Very good adhesion on coated substrates
- + Very good scratch resistance

Anwendungen

- + 2-piece cans and 3-piece cans
- + Technical packaging
- + Crown corks and screwcaps
- + Twist-off closures
- + 3-piece aerosol cans



At Home + Abroad

We Are Your Plus.

Zeller+Gmelin has got offices worldwide, plus its head office in Eislingen in Baden-Württemberg. Our name stands for reliability and quality, at all times. Our subsidiaries and partners with all their employees ensure this on a worldwide basis.

The distinct expertise of our sites and our smooth cooperation are beneficial not just to us, the company as a whole – but also to you, the customer.

The concentrated competence and understanding of processes, application and development, coupled with problem-solving skills and personal advice, are what make Zeller+Gmelin a global figure when it comes to understanding and solving your problems.



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