



Technische Information



EURAPID O37-Series

Conventional Drying Printing Inks for Metal Decoration

Charakteristics

EURAPID O37 inks are highly concentrated offset and dry offset printing inks designed for printing on **coated** or **uncoated** metal sheets or metal containers. The inks dry by oxidation.

The inks meet the technical requirements in terms of high flexibility and abrasion resistance.

Technical Data

Properties:

- **Light resistance maximum 5 (DIN 16525). Exceptions see resistances table page 4**
- **not Heat sterilisable**
- high intensity
- very good scratch resistance
- high gloss
- temperature resistant until 180 °C (10 min)
- resistant against overprint varnish
- resistant against solvent (DIN 16524)
- fast drying (around 7min. at 170 °C).
- excellent adhesion
- Deep drawable

Substrates

Coated and uncoated metals

Before beginning to print we recommend pretests, in order to test the desired characteristics of the finished product. On request we are also able to make test prints for you on your specific substrate.

Packaging

- 1,0kg metal can
- 2,5kg metal can

Technical Service Center

Kindly note that we are ready at any time for competent technical application support on your site.

Please contact our technical service center for printing inks:

Ink-Service@Zeller-Gmelin.de

Tel: +49 7161 802-279

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Covering Whites

The **EURAPID O37** types of covering white are characterised by their high opacity at low ink lay-down and their very good scratch resistance. Additionally they have a very low tendency to yellowing.

- **EURAPID O37-X55001**
non-dyed white for mixing
- **EURAPID O37-X55002**
violet-dyed for clear coated metals
- **EURAPID O37-X55003**
blue-dyed for gold coated metals

Additives

F811 Printing Oil
Mineraloil based printing oil. Reduces tack and viscosity. Addition max. 5%

T111 drying agent, addition 0,5% - 1,0%

EURAPID O37-X60001 Transparent white, highly transparent, for reducing colour strength, tack and viscosity remain at a comparable level, unlimited addition.

EURAPID O37-X60002 varnish for colours.
Improves the ink transfer, addition max 10%.

EURAPID O37-X60003 varnish for covering white and transparent white. Improves the ink transfer. Addition max 10%.

Remark:

The addition of any additive might change the overall characteristics of the printing ink.

Storage

Optimal storage conditions:

Store in a cool and dark place. The optimal storage temperature is 20°C. Higher storage temperatures reduce the shelf-life. Protect from frost.

Warranty:

If the inks are stored correctly, we guarantee a shelf life of 6 months from date of delivery, as our raw material suppliers guarantee this period to us. However we know from practical experience that the inks can remain usable for 1-2 years or longer if they are properly handled and stored.

Product Designation

Process inks:	O37-S...
Pantone® base inks:	O37-P...
Covering white:	O37-X55...

Remark on Light Resistance

Light resistance can change when mixing inks and when printing halftone.

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Marking

Marking according to EC legislation:

Our inks are classified and marked according to EC legislation and the German "Gefahrstoffverordnung" (German dangerous substances regulation). The material safety data sheet (MSDS) is available on request.

Remarks on Migration and Conformity

Regulation (EC) No. 1935/2004 requires that the one responsible for the "placing on the market" of a packaging article must have an appropriate documentation available to demonstrate the compliance with the rules related to food processing and distribution.

Not only the used materials have an influence on the food-legislation related properties of a packaging. The production process of the packaging has a significant impact as well.

Therefore we recommend that you send your finished products to a recognized analytical institute for examination and certification. That way you can prove that your products comply with the legal requirements.

The transfer of substances from the packing into the filling is called migration. The following production parameters have a significant influence on the grade of migration:

- correct processing, especially the complete drying of the ink film
- type of substrate and substrate thickness (sufficient barrier effect of the substrate)
- prevention of a permanent direct contact of the printing ink with the food
- use of low-migration printing inks

The EURAPID O37 ink series has no special low-migration formulation. Therefore anyone placing a packaging product on the market must ensure that the packaging is a functional barrier when printing primary packaging for food.

However please note that migration can also occur by set-off when the printed surface is pressed against the food-contact surface of the packaging in the stack or reel.

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Resistance Properties for EURAPID Process and Pantone® Inks

Colour Shade	Item Number	Light resistance	Spirit	Solvent Mixture	Alkali	
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Process Inks

Yellow	O37-S1101	5	+	+	+	
Magenta	O37-S1201	5	+	+	-	
Cyan	O37-S1301	8	+	+	+	
Black	O37-S1401	8	+	+	+	

Pantone®

Yellow	O37-P100	5	+	+	+	
Yellow 012	O37-P101	5	+	+	+	
Orange 021	O37-P150	6-7	+	+	+	
Warm Red	O37-P200	3-4	+	+	-	
Red 032	O37-P201	6-7	+	+	+	
Rubine Red	O37-P202	5	+	+	-	
Rhodamine Red	O37-P203	6	+	+	+	
Purple	O37-P250	6-7	+	+	+	
Violet	O37-P251	6-7	+	+	+	
Reflex Blue	O37-P300	6-7	+	+	+	
Process Blue	O37-P301	8	+	+	+	
Blue 072	O37-P302	6-7	+	+	+	
Green	O37-P350	8	+	+	+	
Black	O37-P400	8	+	+	+	

The colors shown are only for illustration. The colors are not a binding color sample!

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Declaration of Composition and Product Declaration

As there are no specific regulations concerning printing inks and varnishes Zeller+Gmelin -like other ink suppliers- is obliged to follow regulations in the EU not directly related to printing inks.

Free from VOC

EURAPID inks for metal decoration can be classified under the generic term "oil based ink". These inks dry by oxidation. The drying time can be shortened with the application of an IR source.

The mineral oils used for EURAPID inks for metal are not regulated by the current version of the German "Bedarfsgegenständeverordnung" from April 1997 (German regulation for food packaging and articles of daily use).

According to the currently valid guidelines for the restriction of VOC emissions by the EU commission the oils used in the above printing inks are not classified as VOC and are not subject to any regulation. (VOC: "Volatile Organic Compounds")

Regulation 1935/2004

Article 3 of the Regulation 1935/2004 (impact on food) demands, that materials and articles do not transfer their constituents to food in quantities which could endanger human health or bring about an unacceptable change in the composition of the food or bring about a deterioration in the organoleptic characteristics thereof.

A possible impact on the quality of food does not solely depend on the printing ink itself but is depending on the complete production chain (ink laydown, drying temperature, substrate, etc.). As printing ink manufacturer we have no influence on the printing parameters. For this reason we can generally not confirm a compliance to Regulation 1935/2004 only based on the composition of the ink.

Based on Article 17 (traceability) material and articles shall be ensured at all stages in order to facilitate control, the recall of defective products, consumer information and the attribution of responsibility.

All raw materials for ink batches at Zeller+Gmelin are documented in writing on the Formula Component Report. Based on the batch number every raw material can be clearly traced back to the raw material batch.

Directive 2002/72/EC

this so-called "plastics directive" lists substances which are allowed to get into direct contact with foodstuffs. It also sets migration limits for each substance up to which the substances are allowed to migrate into the food (listed in the annex of the directive and its amendments). Printing ink components are not allowed to get into direct contact with foodstuffs and are therefore not included in this list. This is the reason why we can not confirm the conformity of our products with directive 2002/72/EC.

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Directive 2007/19/EC

This Directive, which is an amendment to the Plastics Directive 2002/72/EC, provides limits for substances not listed in the corresponding annexes of the Plastics Directive and amendments. Most components used in printing inks are not intended to get into direct contact with foodstuff. Therefore directive 2007/19/EC does not indicate specific migration limits for them. For these substances without SML a general limit of <10ppb (10 µg/kg food) for the transfer into food has to be undercut (Article 7). Again, many different factors have an impact on the migration (see remark under 1935/2004). Therefore a compliance to Directive 2007/19/EC can not be confirmed.

Even though the directives 2002/72/EC and 2007/19/EC relate to plastic materials and articles the migration limits specified therein are valid for all primary food packagings (including those which are not made from plastic materials).

CEPE / EuPIA – Exclusion List

CEPE is the European Council of producers and importers of paints, printing inks and artists colours whereas EuPIA is the European Printing Ink Group of CEPE. The printing ink industry voluntarily came up with the Exclusion List for specific substances many years ago.

Zeller+Gmelin is an active member in the EuPIA and subgroups. The raw materials used by Zeller+Gmelin for the formulation of our printing inks meet the guidelines of the CEPE / EuPIA Exclusion list. This means that CMR-substances (cancerogenic, mutagenic and reprotoxic) plus T (toxic) and T⁺ (very toxic) are not used in our printing inks.

Heavy Metals

CONEG stands for Coalition of North-Eastern Governors in the USA. One of their legislations, adopted by 18 states as of 1998, requires reductions in the amount of the four heavy metals mercury, lead, cadmium, and hexavalent chromium in packaging and packaging components sold or distributed in their member states. For Zeller+Gmelin printing inks the limits for heavy metals as listed in the CONEG-Regulation (USA) are met. The Euro Norm 71.3 refers to the max level of heavy metals in childrens toys. For Zeller+Gmelin printing inks the limits for heavy metals as listed in the DIN EN 71-3 are met.

Heavy metals are no part of our formulations.

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Hazardous substances

Substances mentioned in the directive **2002/95/EC** (RoHS) are not intentionally used in our formulations / printing inks.

SVHC-substances (substances of very high concern): In our products no substances are used which meet the criteria of SVHC-substances (substances of very high concern). SVHC-substances are substances which are classified as CMR 1 & 2, PBT (PBT pollutants are chemicals that are toxic, persist in the environment and bioaccumulate in food chains), vPvB (Substances that are potentially very persistent and very bioaccumulative) und endocrine disruptors (artificial hormones).

The substances listed in the guide line **67/548/EEC** (amended by the directive **2006/121/EC**) and in the guide line **76/769/EEC** are not part of the formulation of our printing inks.

Furthermore we confirm that our printing inks are in accordance with the EC regulation **1895/2005** (repeals the guide line **2002/16/EC**).

ISO 9001

The production site of Zeller+Gmelin / Germany is certified according to DIN EN ISO 9001:2000 and DIN EN ISO 14001:2005 (corresponds to EN ISO 14001 edition Nov. 2004).

Please note:

According to applicable law the manufacturer of the finished article and the filler have the full legal responsibility to ensure that their product is fit for its intended purpose and complies with the applicable rules (not the supplier).

Please also consider the relevant publications of the European Printing Inks Association EuPIA (<http://www.eupia.org>).

There are many types of final packaging and the printing ink is only one constituent. Since the parameters in the printing, packing and storage processes are not under the control of the printing ink manufacturer, the printing ink suppliers are not able to issue certificates or declarations of compliance which cover the legal responsibility of the entire packaging chain (Text from EuPIA-PIFOOD May 2007).

The statements made in this declaration are according to our current knowledge. They do not absolve the user from its own responsibility to ascertain that our products are suitable for his application.

Zeller+Gmelin GmbH & Co. KG

ppa.
M. Ruckstädter
Sales Manager

i.V.
A. Rascher
Head of Product Management

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