

# 2-pack Marking Inks of the Series SD 2617, yellow

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## 2-pack marking ink SD 2617

## ~~2-pack marking ink SD 2617 HV~~

## ~~2-pack marking ink SD 2617 SF~~

Index SD = screen printing

~~Index HV = highly viscous~~

~~Index SF = stronger colour~~

- free of lead chromates and amines
- low solvent content/high solids content
- long pot life/processability: min. 1 month
- exceptional covering power

Please read this technical report and the material safety data sheet according to EEC 91/155 carefully before using the product.

## 1. General information

The 2-pack marking inks of the series **SD 2617** are free of lead chromates. The excellent covering power corresponds to pigments containing lead chromates that have been used thus far, which are classified "poisonous" according to dangerous goods regulation of 01.11.93 and must be marked accordingly. In addition, the 2-pack marking inks of the series **SD 2617** are free of amines.

## 2. Application

The 2-pack marking inks of the series **SD 2617** are applied by screen printing where they are used to print letters, figures, symbols and bar codes. The good solder bath resistance renders them suitable for the application of "service prints" even on the solder side of the printed circuit board.

## 3. Special notes

The exceptionally long pot life/processability (at least 1 month), together with their other properties (see also Item 6 "Properties"), guarantee the user a high yield.

The following types are available:

- SD 2617** : standard type
- ~~**SD 2617 HV** : Same as SD 2617, but highly viscous adjustment (Index HV), especially suitable for printing over high conductors.~~
- ~~**SD 2617 SF** : Same as SD 2617, but reddish yellow in colour (Index SF = stronger colour), to achieve an improved contrast.~~

p.t.o.

In case other colours are required, we recommend the use of our 2-pack marking inks of the series **SD 2692 T** which are particularly distinguished by their very long pot life (at least 6 weeks).

The following types are available:

- 3.1** 2-pack marking ink **SD 2632 T**, red
- 3.2** 2-pack marking ink **SD 2642 T**, black
- 3.3** 2-pack marking ink **SD 2652 T**, blue
- 3.4** 2-pack marking ink **SD 2692 T**, white
- 3.5** We refer you in particular to our 2-pack marking ink **SD 2694**, white, which has a pot life of approx. 3 days. **SD 2694** does not yellow, showing practically no colour change even after several tempering processes with subsequent wave soldering.
- 3.6** For large-area printing on copper we recommend our solder resists, such as the series **SD 2468 NB**, which are available in various colour adjustments.

Special technical reports for these products are available upon request. In our report manual these technical reports are filed under group 2.

## 4. Test data

		<b>SD 2617</b>	<b>SD-2617 HV</b>	<b>SD-2617 SF</b>
<b>4.1 Colour/appearance</b>		: yellow	yellow	yellow (stronger colour)
<b>4.2 Solids content</b> [% by weight] (1 h/125 °C, 1 g weighed quantity DIN 53 216, part 1) mixed		: 85 ± 3	85 ± 3	85 ± 3
<b>4.3 Viscosity at 20 °C</b> [mPas] (measured with Haake RV 20* PK 1/1°, D = 100 s <sup>-1</sup> ) mixed		: 21000 ± 4000	28000 ± 5000	28000 ± 5000
<b>4.4. Density at 20 °C</b> [g/cm <sup>3</sup> ] DIN 53 217, part 2 mixed		: 1.48 ± 0.05	1.48 ± 0.05	1.48 ± 0.05
<b>4.5 Pot life of mixture</b> [h] (at room temperature, 18 - 23 °C; set-up quantity: 500 g)		: →	at least 1 month	←

\* Viscosity measuring unit supplied by: Haake Mess-Technik GmbH + Co  
Dieselstr. 4, D - 76227 Karlsruhe  
phone: (0721) 40 94 - 0  
telefax: (0721) 40 94 - 360, telex: 7 826 739

## 5. Dangerous goods regulation

Detailed specifications of safety precautions, environmental protection, waste disposal, storage, handling, exhaust air regulations as well as other characteristics can be found in the material safety data sheet according to EEC 91/155.

When using chemicals, the common precautions should be carefully noted.

## 6. Properties

The 2-pack marking inks of the series **SD 2617** are distinguished by the following properties:

- free of lead chromates and amines
- exceptionally long pot life of at least 1 month ensuring a long screen-open time and high printing quality for a longer processing period

- precise definition of contours, even of fine details, due to the thixotropic adjustment
  - the very good covering power means excellent contrast against background, even fine details are easily legible
  - excellent resistance to water, acids, lyes, oils, fats and numerous solvents
  - very good adhesion on most plastics, metals and glass
  - excellent adhesion both on photoimageable solder resists such as **ELPEMER® 2461** and **ELPEMER® 2469 SM** and on conventional solder resists such as **SD 2468 NB-M/21**.
  - very good solder bath resistance; thus also suitable for the application of "service-prints" on the solder side of the printed circuit board.
- Special technical reports for these products are available upon request. In our report manual these technical reports are filed under group 2.
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## 7. Mixing ratio

**Component A : Component B = 4 : 1 (parts by weight)**

The two components (resin component A and hardener component B) are already packed in the correct mixing ratio.

The volume of the container of component A is sufficient to accommodate the total quantity of component B.

For mixing we recommend using mechanical stirring equipment with a preferable stirring time of 10 minutes. Pot life at room temperature (18 - 23 °C, set-up quantity: 500 g) is at least 1 month. Once the ink has been well mixed, processing can start immediately.

Our **technical information sheet TI 15/10**: "Processing of 2-pack systems" gives detailed advice on correct mixing. We recommend your quality assurance department adopts major items addressed in **TI 15/10** in appropriate operating instructions. We would gladly send you **TI 15/10** on request. In our report manual this technical information sheet is filed under group 15.

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CAUTION: The labels on our containers indicate both the volume [L] and weight [kg]. The mixing ratio applies to the weight.  
Version 07/2021

## 8. Processing

The 2-pack marking inks of the series **SD 2617** are applied by screen printing. Printing should be effected on clean and grease-free substrates only.

### 8.1 Screen printing machines

Both manual screen printing tables and semi/fully automatic screen printing machines may be used.

### 8.2. Screens

Screen fabric : 80 - 120 T (lines/cm) polyester or corresponding steel mesh  
Screen tension : at least 18 Newton

### 8.3 Squeegee

Squeegee hardness : 75 - 80 Shore-A  
Squeegee profile : right-angled  
Squeegee angle : 75 - 80 °

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## 9. Adjustment of viscosity

The 2-pack marking inks of the series **SD 2617** are adjusted in such a manner that they can normally be processed in the condition supplied. If necessary, their viscosity can be reduced for processing purposes by adding up to 5 % of the universal thinner **UV 5000**.

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## 10. Auxiliary products

We recommend the following auxiliary products for screen printing:

p.t.o.

### 10.1 Screen opener HP 5200

- spray for dissolving dried circuit-printing inks on screens
- contains extremely active substances, thus immediately effective against clogged screens
- silicone and grease-free
- CFC-free propellant

### 10.2 Anti-static spray HP 5500

- the anti-static spray **HP 5500** helps remove/avoid any static charges which may occur during screen printing
- solvent, silicone and grease-free
- CFC-free propellant

Special information sheets for these products are available upon request. In our report manual these technical data sheets are filed under group 5.

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## 11. Cleaning

To clean screens and tools we recommend our cleaning agent **R 5817**. On the strength of its high flashpoint (+ 32° C) and the classification into hazard class A II according to VbF (provisions on flammable liquids), our cleaning agent **R 5821** is perfectly qualified for use in screen-washing units.

A special technical report on these products is available upon request. In our report manual this report is filed under group 5.

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## 12. Drying conditions

The 2-pack marking inks of the series **SD 2617** can be thermally cured at the following rate:

### 12.1 Convection dryer

Temperature	[°C]	: 130
Time	[min]	: 45 *

\* Time: Object holding time, i.e. the time is measured from the point when the panels reach the curing temperature.

### 12.2 Infrared conveyorised dryer

Temperature	[°C]	: 160 - 180
Time	[min]	: 7 - 8

We recommend conducting preliminary trials to attain the optimum adjustment of the IR dryer.

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## 13. Standard packaging

The 2-pack marking inks of the series **SD 2617** are packed for delivery as follows:

Component A = 10 tins of 0.8 kg = 8 kg carton

Component B = 10 plastic bottles of 0.2 kg = 2 kg carton

= 1 selling unit = 10 kg

Partial lots of the selling units may be ordered, but will entail surcharges to cover repackaging costs.

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## 14. Storage

In a cool, dry place, sealed original containers can be stored for at least 9 months.

**In accordance with DIN ISO 9000 ff, labels on containers show expiry dates!**

**ATTENTION:** Temperatures in excess of + 25 °C affect the storage stability!

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## 15. Further literature

In addition to the recommendations given in this technical report, we can provide our own technical publications which give highly detailed information on the application and processing of our products.

**Report 113:**

Lacquers for circuit-printing in the PCB-production (in German)

**Report 121:**

Ecological aspects of the application of circuit-printing lacquers and other solvent-containing products (in German)

**Technical Information sheet TI 15/10:**

"Processing of 2-pack systems"

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**16. Further products for the production of pcbs**

Our production programme includes all special lacquers for the production of printed circuits:

**16.1 Dewatering fluids**

For dehydration and preservation of printed circuit boards.

**16.2 Water-dipping varnishes**

Dewatering varnishes for printed circuit boards with excellent protection against corrosion.

**16.3 Solder flux lacquers**

For dip coating and roller coating processes against pcb corrosion.

**16.4 Etch resists**

Resistant up to pH 10, strippable in caustic soda, UV and conventional curing.

**16.5 Plating resists**

Resistant at all pH levels, UV and conventional curing.

**16.6 ELPEMER photoresists**

Photoimageable etch and plating resists, aqueous-alkaline as well as polyalcohol-developable, strippable in caustic soda solution, for screen-printing, curtain coating and roller coating procedures.

**16.7 Solder resists**

1- and 2-pack solder resists, available as low solvent content and solvent-free adjustments, non-bleeding, highly flexible, oven drying, UV curing, UV sensitive.

**16.8 ELPEMER photoimageable solder resists**

Photoimageable 2-pack solder resists, polyalcohol-developable and/or aqueous-alkaline developable, for application by screen printing, curtain coating and electrostatic spraying.

**16.9 Peelable solder resists**

Suitable for masking those areas of circuit boards which should not be in direct contact with the solder bath, such as gold contacts, card-edge connectors, tip contacts, through-platings in SMT-mixed assemblies, etc. Peelable before and/or after soldering process.

**16.10 Via-hole fillers**

1-pack screen printing inks to fill via holes. Enables vacuum-incircuit test even for SMT-pcbs.

**16.11 Marking inks, legend inks**

Conventional 1- and 2-pack inks as well as UV curing systems.

**16.12 ELPEMER photoimageable marking inks, legend inks**

Photoimageable 2-pack marking inks for application by screen printing; print is made in blank screen so that no time-consuming preparation of a screen stencil is required.

**16.13 Carbon-conductive inks**

Substitute for gold at contact points; for the production of crossing tracks.

**16.14 Auxiliary products for the production of pcbs**

This extensive range of products includes thinners, retarders, screen-openers, anti-static sprays, anti-static agents, screen-cleaning agents, cleaning agents for screen-washing units and lacquer-processing units.

**16.15 Fluxing agents**

For hot-air levelling and roller-tinning processes.

p.t.o.

**16.16 Cleaner**

For deoxidizing copper surfaces without metal degradation.

**16.17 Defoamants**

For the elimination of foam in acid and weak alkaline baths; for defoaming in aqueous-alkaline developers; **silicone-free and biologically degradable.**

Special technical reports for these products are available on request.

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**17. Further products for the electronics/electrical engineering industries**

We boast a wide range of

**solder resists, conformal coatings, casting resins, casting compounds, electro pastes, insulating lacquers, impregnating varnishes, adhesive lacquers, chip adhesives and auxiliary products for the electronics.**

Special technical reports are also available for these products and can be provided on request.

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We are prepared to assist you in solving your problems and look forward to receiving your inquiry. On request we will send you publications and samples free of charge.

Our verbal and written advice is given to the best of our knowledge and is not binding, also with regard to possible third-party proprietary rights. This advisory service, however, does not exempt the user of our products from performing his own tests in view of the application intended. A possible liability is confined to the value of the goods supplied by us and applied by the user. We guarantee the perfect quality of our products in compliance with our terms of sale and delivery.

Supplement to technical report for  
2-pack marking inks  
of the series

**SD 2617**

Edition LP 963101 E-0

## 14. Storage

In a cool dry place, sealed original containers can be stored for at least **6** months.

In accordance with EN ISO 9001 / ISO 9001 labels on containers show expiry dates.



**Storage temperatures in excess of +25 °C [77 °F] affect the storage stability.**