ELPEPCB®
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TR TECHNICAL REPORT

Plating resist Wepelan SD 2154 E

The plating resist **Wepelan SD 2154 E** is applied as a positive print and is resistant to acid and alkaline etching and plating baths over the entire pH range.

- High definition application by screen printing
- enables the representation of fine conductors
- air-drying or oven-drying
- excellent adhesion and high surface hardness when dried in oven
- very good resistance to cyanide baths
- strippable by solvents such as esters or ketones

Characteristics

Colour/appearance	blue
Solids content, DIN EN ISO 3251 1 h, 125 °C [257 °F], 1 g weighed quantity	53 ± 2 % by weight
Viscosity* at 20 °C [68 °F], DIN EN ISO 3219	16 000 ± 3 000 mPas
Density at 20 °C [68 °F], DIN EN ISO 2811-1	1.10 ± 0.05 g/cm³

* measured with Haake RS 600, C 20/1°, D = 50 s^{-1}, viscosity measuring unit supplied by:
Thermo Fisher Scientific, Dieselstraße 4, 76227 Karlsruhe, Germany
Phone +49 721 4094-444, Fax +49 721 4094-300, www.thermo.com

Indices: SD = screen printing, E = elastic

Processing

	Please read this technical report and the publications listed below carefully before using the product. These sheets are enclosed with the first shipment of product or sample.
MSDS	The corresponding material safety data sheet contains detailed information and characteristics on safety precautions, environmental protection, transport, storage, handling and waste disposal.
TI	Technical information TI 15/3 ”Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents“
TI	Technical information TI 15/13 ”Precleaning in the pcb fabrication process”

Since the many different permutations make it impossible to evaluate the whole spectrum (parameters, reactions with materials used, chemical processes and machines) of processes and subsequent processes in all their variations, the parameters we recommend are to be viewed as guidelines only that were determined in laboratory conditions. We advise you to determine the exact process limitations within your production environment, in particular as regards compatibility with your specific follow-up processes, in order to ensure a stable fabrication process and products of the highest possible quality.

LP 142210 E-2 / 0208702e.001

The specified product data is based upon standard processing conditions/test conditions of the mentioned norms and must be verified observing suitable test conditions on processed printed circuit boards.

Feel free to contact our application technology department (ATD) if you have any questions or for a consultation.

Safety recommendations

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

→ Ensure that extractor units of workplace ventilation arrangements are positioned at solvent source level.

Viscosity adjustment

The plating resist **Wepelan SD 2154 E** is adjusted in such a manner that it can normally be processed in the condition supplied. To reduce its viscosity for processing purposes

DIL dilute with max. 5 % of universal thinner **UV 5000** or
max. 5 % of universal retarder **UZ 5100**

The dilution effect of **UZ 5100** is slightly lower than that of **UV 5000** while its screen-open time is longer.

Auxiliary products recommended

- **Screen opener HP 5200**
  highly active spray for dissolving dried screen printing inks from the screen; silicone- and grease-free, thus no surface defect/dewettings or smearing effects to be expected
- **Anti-static spray HP 5500**
  prevents and eliminates electrostatic discharge occurring during screen printing; silicone- and grease-free
- **Cleaning agent R 5899**
  for screen washing equipment, simply and safely to handle, no labelling in accordance with the German dangerous goods regulations required, extremely high flash point (> 100 °C [> 212 °F]), low vapour pressure < 0.1 hPa at 20 °C [68 °F], thus not affected by the EU-VOC regulation 1999/13/CE
- **Cleaning agent R 5821**
  for screen washing equipment and the cleaning of work tools, high flash point (+32 °C [89.6 °F])
- **Cleaning agent R 5817**
  for the manual cleaning of screens and tools

Screen printing

→ Ensure that the surface to be coated is clean, dry and grease-/oxide-free and that copper surfaces preferably have an average surface roughness of 2 µm.

Screen printing parameters recommended

Screen fabric	Polyester 90–48 to 120–34 (old nomenclature: 90–120 T) or corresponding steel fabric
Screen tension	at least 25 N/cm or as specified by the screen mesh manufacturer
Squeegee	75–80 Shore-A-Härte, right-angled
Squeegee angle	approx. 70°

Drying/curing

The plating resist **Wepelan SD 2154 E** starts to dry at room temperature with evaporation of solvents, which causes the surface to be very sensitive. In case of a large series production we therefore recommend drying in an oven. We recommend the following drying parameters in order to ensure its strippability:

Drying at room temperature (18–23 °C [64.4–73.4 °F])	Drying in circulating hot air units	Drying in IR drying units
approx. 24 h	30 min* at 80 °C [176 °F]	for ex. 4–6 min at 160–180 °C [320–356 °F]

* Object holding time: The curing time starts when the panels reach the curing temperature.

➔ Find out the ideal IR temperature profile by carrying out pre-trials.

Stripping of the resist

➔ Strip the plating resist **Wepelan SD 2154 E** in esters or ketones such as acetone or methyl ethyl ketone (MEK).

The plating resist **Wepelan SD 2154 E** will completely dissolve when stripped.

Standard packaging

1 bucket of 6 kg = 1 selling unit. Smaller quantities available against surcharge.

Shelf life and storage conditions

Shelf life: In sealed original containers at least 9 months

Storage conditions: +5 °C to +25 °C [+41 °F to +77 °F]

For warehousing reasons, isolated cases may occur where the shelf life upon shipment is less than the shelf life indicated in this technical report. However, it is ensured that our products have **at least** two-thirds of their shelf life remaining when they leave our company. Labels on containers show shelf life and storage conditions.

Disclaimer

All descriptions and images of our goods and products contained in our technical literature, catalogues, flyers, circular letters, advertisements, price lists, websites, data sheets and brochures, and in particular the information given in this literature are non-binding unless expressly stated otherwise in the Agreement. This shall also include the property rights of third parties if applicable.

The products are exclusively intended for the applications indicated in the corresponding technical data sheets. The advisory service does not exempt you from performing your own assessments, in particular as regards their suitability for the applications intended. The application, use and processing of our products and of the products manufactured by you based on the advice given by our Application Technology Department are beyond our control and thus entirely your responsibility. The sale of our products is effected in accordance with our current terms of sale and delivery.

Any questions?
We would be pleased to offer you advice and assistance in solving your problems. Samples and technical literature are available upon request.

Lackwerke Peters GmbH & Co. KG
Hooghe Weg 13, 47906 Kempen, Germany
Internet: www.peters.de
E-Mail: peters@peters.de
Phone +49 2152 2009-0
Fax +49 2152 2009-70

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