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TR TECHNICAL REPORT

Touch-up lacquer SD 2369 UV-ABL

The touch-up lacquer **SD 2369 UV-ABL** is a UV curing 1-pack coating that is used to remove mechanically caused minor imperfections in the solder resist such as scratches. It is applied by brush, or by screen printing in case of a serial fault. The touch-up lacquer **SD 2369 UV-ABL** complies with a solder bath resistance of 15 s at 265 °C [509 °F], tested in accordance with IPC-SM-840E.

Characteristics

Colour/appearance	yellow-green, silk glossy
Solids content	100 %
Viscosity* at 20 °C [68 °F], DIN EN ISO 3219	13 000 ± 2 000 mPas
Density at 20 °C [68 °F], DIN EN ISO 2811-1	1.34 ± 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, UV = UV curing, ABL = touch-up lacquer

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.
	Technical information TI 15/3 "Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents"

The touch-up lacquer **SD 2369 UV-ABL** is applied by brush or screen printing. Since UV curing products do not contain solvents no drying on the screen takes place. However, the presence of UV radiation (sunlight or UV lamps) causes the ink to cure. For this reason, it is indispensable to use yellow light and/or yellow filters/UV protective foils.

Protect from UV light

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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.

The specified product data is based upon standard processing conditions/test conditions of the mentioned norms and must be verified if necessary while observing suitable test conditions on processed products.

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

Safety recommendation

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

Viscosity adjustment

The touch-up lacquer **SD 2369 UV-ABL** 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. 3 % of reactive thinner **VR 5006**

As the reactive thinner **VR 5006** participates in the curing process, it is not possible to use any other thinner or solvent.

Auxiliary products recommended

- 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 the cleaning of equipment and work tools, high flash point (+32 °C [89.6 °F])
- Cleaning agent R 5817
  for the manual cleaning of screens and tools

Brushing

- The fineness of the brush should be chosen according to the size of the imperfections.

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.

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Screen printing parameters recommended

Screen fabric	Polyester 68-55 to 100-40 (old nomenclature: 68-100 T) or corresponding steel fabric
Screen tension	at least 25 N/cm or as specified by the screen mesh manufacturer
Snap-off	as low as possible
Squeegee	75-80 Shore-A-hardness, right-angled
Squeegee angle	approx. 75 °

Drying/curing

The touch-up lacquer **SD 2369 UV-ABL** cures by exposure to UV radiation. For this purpose, high-pressure mercury lamps with a power consumption of 80-100 Watt/cm arc length are suitable.

- Cure the touch-up lacquer **SD 2369 UV-ABL** with a UV light energy of approx. 3000-4000 mJ/cm^2, depending on the coating thickness applied.

The thicker the coating layer, the higher you should select the UV light energy.

The light energy indicated above was measured with a Beltron UV integrator*. Devices of other manufacturers may show different values.

- Because the ink post-cures at room temperature, testing and further processing of the printed circuit boards should not be conducted earlier than one hour after UV curing.
- As the emission spectrum of the UV lamps changes during their life time they should be replaced regularly according to the manufacturer's instructions.
- Install operating time counters in order to control the life span.

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Packaging

The packing units available are indicated in our offer which we will send you upon request.

Shelf life and storage conditions

Shelf life and storage conditions of touch-up lacquer **SD 2369 UV-ABL**:


Shelf life: In sealed original containers at least 9 months

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

Protect from UV light

Shelf life and storage conditions of reactive thinner **VR 5006**:


Shelf life: In sealed original containers at least 6 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.

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