

Peelable solder masks of the series SD 2950

- peelable solder masks for the partial covering of printed circuit boards, to protect them from direct contact with the solder or in plating processes (e. g. gold contacts, edge connectors, plated-through holes and areas printed with carbon-conductive ink)
- simple and high-definition application by screen printing, no drying in the screen
- solvent-free/VOC-free (VOC = Volatile Organic Compounds)
- high thermal stability
- very high elasticity and tear resistance
- easy removal before and/or after the soldering process
- blue, green or white colouration ensures a good contrast to numerous substrates
- risk of base material staining virtually excluded

Table 1: Possible fields of application for the peelable solder masks of the series **SD 2950**

		SD 2950 T	SD 2952	SD 2954	SD 2955	SD 2958	SD 2962 P
Lead solder	wave soldering	++	++	++	++	++	++
	reflow soldering	-	-	++	++	-	-
	HAL processes (vertical)	+	-	-	-	+	-
Lead-free solder:	wave soldering	+	+	++	++	+	+
	reflow soldering	-	-	-	++	-	-
	HAL processes (vertical)	-	-	-	-	+	-
Multiple temperature stress, e.g. multiple soldering		+	+	++	++	+	+
Chemical/electroplated finish processes		+	-	-	-	-	++
Printing over carbon-conductive inks		+	-	+	+	+	-
Coverage of edge connectors		++	++	++	++	++	++
Peelable from plated-through holes		+	++	++	++	+	++
Peelable prior to soldering		-	++	++	++	+	++

++ = suitable + = conditionally suitable - = unsuitable

- Please note that the recommendations in the table are non-binding.

Many different parameters, such as layer thickness, layout of the printed circuit board, substrate quality, curing/soldering conditions, process chemistry, etc., can influence the suitability of a peelable solder mask for a specific process so that - contrary to the table - a different peelable solder mask may prove better. Please see our Application Information sheet AI 2/29 "Selection criteria and processing advice for our peelable solder masks of the series SD 2950" for further information.



- Generally perform preliminary trials to verify the suitability for your intended application.

Characteristics

	Colour/ appearance	Solids content ISO 3251, 1 h, 125 °C [257 °F], 1 g	Viscosity* at 20 °C [68 °F] ISO 3219	Density at 20 °C [68 °F] ISO 2811-1
SD 2950 T	blue	97 ± 2 % by weight	50,000 ± 10,000 mPas	1.20 ± 0.05 g/cm ³
SD 2952	blue	98 ± 2 % by weight	38,000 ± 7,000 mPas	1.23 ± 0.05 g/cm ³
SD 2954	blue	98 ± 2 % by weight	55,000 ± 15,000 mPas	1.12 ± 0.05 g/cm ³
SD 2955	green	99 ± 1 % by weight	70,000 ± 20,000 mPas	1.12 ± 0.05 g/cm ³
SD 2958	blue	98 ± 2 % by weight	50,000 ± 10,000 mPas	1.18 ± 0.05 g/cm ³
SD 2962 P	green	98 ± 2 % by weight	47,000 ± 13,000 mPas	1.26 ± 0.05 g/cm ³

* measured with Haake RS 600, C 20/1°, D = 50 s⁻¹,
viscosity measuring unit supplied by Thermo Fisher Scientific, www.thermofisher.com

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.
AI	Application information AI 2/29 "Selection criteria and processing advice for our peelable solder masks of the series SD 2950"
	Technical information TI 15/3 "Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents"

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 recommendations

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

Adjustment of viscosity

The peelable solder masks of the series **SD 2950** are adjusted in such a manner that they can normally be processed in the condition supplied. A process relevant reduction in viscosity is only possible

DIL with max. 2 % reactive thinner **VR 2950**

As the reactive thinner **VR 2950** participates in the curing process it is impossible to use any other thinners or solvents.

- Please consider that when a thinned peelable solder mask is printed thinner layers will be achieved and the solder resistance and/or peelability may be impaired. Perform pre-trials to ensure that the thinned peelable solder mask can be peeled off perfectly.

Auxiliary products recommended

- [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

Screen printing

Recommended screen printing parameters

Screen fabric	Polyester 12–140 up to 18–250 (per old nomenclature polyester 12–18 T or S [lines/cm]) or corresponding steel mesh
Screen tension	at least 25 N/cm or as specified by the screen mesh manufacturer
Snap-off	as low as possible
Screen coating/ stencil build-up	with thick-film stencils (direct/indirect photopolymer films)
Squeegee	60–65 Shore A, if necessary with rounded blade
Squeegee angle	approx. 75°
Squeegee pressure	as low as possible
Squeegee speed	as low as possible

Drying/curing

The peelable solder masks of the series **SD 2950** are cured for 5–60 min at 120–160 °C [248–320 °F]. Taking into consideration the type of peelable solder mask, application and required properties, appropriate drying conditions must be determined and observed for the peelable solder masks of the series **SD 2950**.

- Please pay attention to the curing parameters and detailed advice on curing in our **Application Information sheet AI 2/29** "Selection criteria and processing advice for our peelable solder masks of the series SD 2950".

Packaging

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

Shelf life and storage conditions



Shelf life: In sealed original containers at least 6 months,
for **SD 2954** 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.

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