

# Conformal/permanent coatings for assembled PCBs

	Product designation	Colour, appearance	Dielectric strength [kV/mm] VDE 0303, part 2	Tracking resistance IEC 112	Moisture and insulation resistance IPC-TM 650, TM 2.6.3.1	Surface resistance [Ohm] VDE 0303, part 3	Volume resistivity [Ohm x cm] VDE 0303, part 3	Curing conditions until tack-free in accordance with DIN 46456	Possible methods of application	Special notes
<b>1. Conformal/permanent coatings of the series SL 1301 N</b> based on polyurethane resin (PUR) • approved and/or prescribed by leading car manufacturers • excellent wetting (index N = wetting agent), even of angular component leads • UL approval for <b>SL 1331 N</b> : best flame class V-0 acc. to UL 94	SL 1301 N	colourless	90	CTI 600	class H	$6 \times 10^{12}$	$5 \times 10^{14}$	100 min	dipping, brushing, spraying, selective coating units	<ul style="list-style-type: none"> <li>• <b>excellent protection against corrosion</b> for assembled pcbs</li> <li>• good surface hardness</li> <li>• can be soldered-through for repair purposes</li> <li>• the colourless adjustments are absolutely transparent</li> <li>• the <b>red or green transparent</b> adjustments offer a clear contrast to the substrate so that the completeness of the coating can be readily controlled</li> <li>• the <b>fluorescent</b> adjustments (Index <b>FLZ</b>) enable the completeness of the coating to be easily controlled under UV light</li> <li>• the <b>highly viscous</b> adjustments (Index <b>HV</b>) are suitable for the spot application of small lacquer quantities by means of dispensers (e.g. to coat component leads)</li> <li>• the indices <b>/23, /25, /45</b> and <b>/55</b> indicate the viscosity of the conformal/permanent coating in seconds of flow time, measured per DIN 53 211 at 20 °C [68°F] using a 4 mm DIN flow cup</li> <li>• The conformal/permanent coatings with the index <b>/23</b> have a specially adjusted viscosity that is particularly suitable for application by means of selective coating equipment.</li> </ul>
	SL 1301 N-FLZ	colourless	90	CTI 600	class H	$6 \times 10^{12}$	$5 \times 10^{14}$	100 min		
	SL 1331 N	red transp.	90	CTI 600	class H	$6 \times 10^{12}$	$5 \times 10^{14}$	100 min		
	SL 1331 N/23	red transp.	90	CTI 600	class H	$6 \times 10^{12}$	$5 \times 10^{14}$	100 min		
	SL 1331 HV	red transp.	92	CTI 600	class H	$2 \times 10^{12}$	$2 \times 10^{15}$	min. 120 min*		
<b>2. Conformal/permanent coating SL 1304 FLZ/45</b> based on polyurethane resin (PUR) • <b>excellent adhesion to hybrids</b>	SL 1304 FLZ/45	colourless	60	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{13}$	30 min	dipping, brushing, spraying, selective coating units	
<b>3. Conformal/permanent coatings of the series SL 1305 AQ</b> based on polyurethane resin (PUR) • <b>water-borne</b> (index AQ = aqueous) • no unpleasant odour during coating and further processing • extremely fast drying at room temperature up to tack-free stage • can be coloured red and/or green by means of colour concentrates <b>FK 1335 AQ</b> or <b>FK 1365 AQ</b>	SL 1305 AQ	colourless	86	CTI 600	class H	$1 \times 10^{13}$	$2 \times 10^{13}$	70 min	dipping, brushing, spraying, selective coating units	
	SL 1305 AQ-FLZ	colourless	86	CTI 600	class H	$1 \times 10^{13}$	$2 \times 10^{13}$	70 min		
	SL 1305 AQ/25	colourless	86	CTI 600	class H	$1 \times 10^{13}$	$2 \times 10^{13}$	70 min		
	SL 1305 AQ/25-FLZ	colourless	86	CTI 600	class H	$1 \times 10^{13}$	$2 \times 10^{13}$	70 min		
	SL 1305 AQ/55	colourless	86	CTI 600	class H	$1 \times 10^{13}$	$2 \times 10^{13}$	70 min		
<b>4. Conformal/permanent coatings of the series SL 1306 N</b> based on modified acrylic resins • enhancement of the conformal/permanent coatings of the series SL 1309 N: less irritation through odour during processing and after drying • excellent resistance to condensate and climatic stress even in case of surface dewing • excellently suited for the conformal coating of uncleaned assembled PCBs in combination with no-clean fluxes • UL approval for <b>SL 1306 N</b> : best flame class V-0 acc. to UL 94	SL 1306 N	colourless	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min	dipping, brushing, spraying, selective coating units	
	SL 1306 N/23	colourless	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
	SL 1306 N-FLZ	colourless	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
	SL 1306 N-FLZ/23	colourless	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
	SL 1336 N	red transp.	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
	SL 1336 N/23	red transp.	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
	SL 1366 N	green transp.	65	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{14}$	90 min		
SL 1306 HV	colourless	40	CTI 600	class H	$2 \times 10^{14}$	$2 \times 10^{15}$	min. 120 min*	dispenser		
<b>5. Conformal/permanent coatings of the series SL 1307</b> based on polyacrylic resin • very fast drying at room temperature • due to a modified solvent formulation <b>SL 1307 MS**</b> (Index <b>MS</b> = moderate boiling solvent) shows a slightly retarded drying with simultaneously highly uniform flow • can be removed completely with thinner V 1307 for repair purposes	SL 1307	colourless	78	CTI 600	class H	$4 \times 10^{12}$	$2 \times 10^{15}$	15 min	dipping**, brushing, spraying**, selective coating units	
	SL 1307 MS	colourless	78	CTI 600	class H	$4 \times 10^{12}$	$2 \times 10^{15}$	55 min		
	SL 1337	red transp.	78	CTI 600	class H	$4 \times 10^{12}$	$2 \times 10^{15}$	20 min		
	SL 1367	green transp.	78	CTI 600	class H	$4 \times 10^{12}$	$2 \times 10^{15}$	20 min		
	SL 1308 FLZ	colourless	85	CTI 600	class H	$2 \times 10^{14}$	$8 \times 10^{13}$	130 min		dipping, brushing, spraying, selective coating units
<b>6. Conformal/permanent coating SL 1308 FLZ</b> based on modified epoxy resins (EP) • insulating and conformal/permanent coating per <b>MIL-V-173 C</b> for life-support electronics • contains fungicides for mould protection, thus suitable for tropical climates	SL 1308 FLZ	colourless	85	CTI 600	class H	$2 \times 10^{14}$	$8 \times 10^{13}$	130 min	dipping, brushing, spraying, selective coating units	
	<b>7. Conformal/permanent coatings of the series SL 1309 N</b> based on modified acrylic resins • exceptional adhesion to nearly all substrates • excellently suited for the conformal coating of uncleaned assembled PCBs in combination with no-clean fluxes • excellent wetting (index N = wetting agent), even of angular component leads • mould resistant per <b>MIL-STD-810 E</b>	SL 1309 N	colourless	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	dipping, brushing, spraying, selective coating units
		SL 1309 N/23	colourless	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	
		SL 1309 N-FLZ	colourless	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	
		SL 1309 N-FLZ/23	colourless	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	
		SL 1339 N	red transp.	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	
		SL 1339 N/23	red transp.	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min	
SL 1369 N		green transp.	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	100 min		
<b>8. Insulating and encapsulating sprays of the series SL 1309 N-S</b> as SL 1309 N but in <b>spray cans</b> (index S), CFC-free • ideally suited for pilot and low-volume series' as well as for repair purposes	SL 1309 N-S	colourless	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	70 min	spray can	
	SL 1339 N-S	red transp.	90	CTI 600	class H	$5 \times 10^{11}$	$5 \times 10^{13}$	70 min		

\* The drying time depends strongly on the coating thickness applied.

\*\* Owing to the fast physical drying process, the conformal/permanent coatings of the series **SL 1307** are only conditionally suitable for application by dipping and spraying. Due to the retarded drying, **SL 1307 MS** is suitable for all application methods.

<b>Thick film lacquer TWIN-CURE DSL 1600 FLZ</b> based on a copolymerisate of polyurethane (PUR) and acrylate (AY) • for thick film application up to <b>2000 µm</b> • solvent-free 1-pack system with the resistance of a 2-pack system • excellent edge coverage	DSL 1600 FLZ	colourless	90	CTI 600	class H	$2 \times 10^{14}$	$1 \times 10^{15}$	Immediately tack-free after UV curing at approx. 1500 mJ/cm <sup>2</sup>	dipping, brushing, selective coating units, dispenser	<b>short process times</b> owing to optimally synchronised curing mechanisms: fast UV curing and progressive chemical cross-linking in shaded areas
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Please ask for further information! We would be glad to send you free samples and detailed technical reports.

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