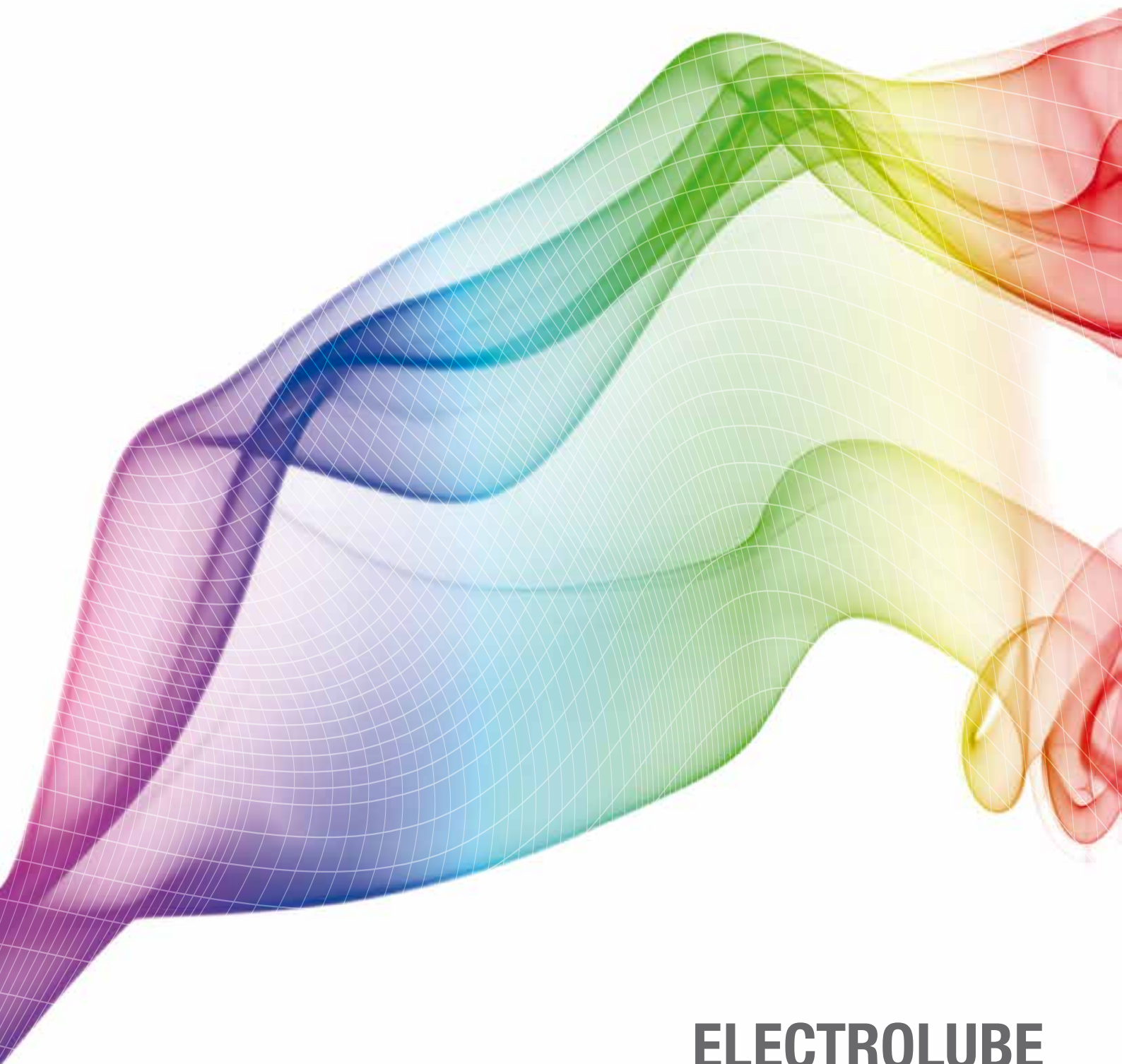


# Product Selector

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## Thermal Management

	HTCX	HTCP	HTCPX	HTS	HTSP	TCOR	ER2220	ER2183	UR5633	SC2003
	Non-Silicone Heat Transfer Paste Xtra	Non-Silicone Heat Transfer Paste Plus	Non-Silicone Heat Transfer Compound Plus Xtra	Silicone Heat Transfer Compound	Silicone Heat Transfer Compound Plus	Thermally Conductive RTV	2 Part Epoxy Resin	2 Part Epoxy Resin	2 Part Polyurethane Resin	2 Part Silicone Resin
Thermal Conductivity (W/m.K)	1.35	2.50	3.40	0.90	3.00	1.80	1.54	1.10	1.24	0.8
Density (g/ml)	2.61	3.00	3.10	2.10	3.00	2.30	2.22	1.95	1.65	1.60
Viscosity/mPa s**	130,000	105,000	640,000	210,000	45,000	145,000	15,000	5,000	30,000	30,000
Cure Time (Hours @ 20°C / 60°C)	N/A	N/A	N/A	N/A	N/A	24*	24/4	24/4	24/4	24/1
Temperature Range (°C)	-50 to +130	-50 to +130	-50 to +130	-50 to +200	-50 to +200	-50 to +230	-40 to +130	-40 to +130	-50 to +125	-60 to +200
Evaporation Weight Loss (96hrs @ 100°C IP-183)	≤0.40%	≤1.00%	≤1.00%	≤0.80%	≤0.80%	N/A	N/A	N/A	N/A	N/A
Dielectric Strength (kV/mm)	42	42	42	18	18	>8	10	10	18	20
Volume Resistivity (Ω-cm)	1 x 10 <sup>14</sup>	1 x 10 <sup>14</sup>	1 x 10 <sup>14</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>14</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>14</sup>	1 x 10 <sup>15</sup>

\* Requires moisture to cure, elevated temperatures not recommended unless moisture is present. \*\*This information should be used as a guideline only.

## Conformal Coatings

	DCA	DCB/DCR	FSC	WBP/WBPS	HPA	TFA	PUCAF	UVCL	TFCF
	Silicone Conformal Coating (SCC3)	Silicone Conformal Coating (SCC3)	Flexible Modified Silicone Coating	Aquacoat Plus/Sprayable	High Performance Acrylic	Toluene Free Acrylic	Aromatic-Free Polyurethane Coating	UV Cure Conformal Coating	Fluorocoat
Colours Available	Clear	Black/Red	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Viscosity (mPa s @ 20°C) (Bulk)	200	200/500	550	200/80	300	260	90	200	2
Flashpoint (°C) (Bulk)	27	27	27	None	-7	-7	27	>90	7
Solids (%) (Bulk)	37	47/60	50	35	35	36	37	100	2
Dielectric Strength (kV/mm)	90	90	80	50	45	45	60	27	90
Insulation Resistance (Ω)	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>20</sup>	5 x 10 <sup>11</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	7 x 10 <sup>12</sup>	1 x 10 <sup>15</sup>
Temp. Range (°C)	-70 to +200	-70 to +200	-50 to +125	-60 to +125	-55 to +130	-65 to +125	-55 to +130	-65 to +135	-50 to +125
Touch Dry Time (Mins @ 20°C)	50-55	50-55	10-15	25-35	10-15	15-20	10	-	5
Cure Time (Hours @ 20°C)	2 @ 20°C & 2 @ 90°C*	2 @ 20°C & 2 @ 90°C*	24	24	24	24	24	-	24
Solvent Resistance	Excellent	Excellent	Good	Excellent	Good	Good	Good	Best	Good
Humidity Resistance	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Good	Excellent	Excellent
Mould Resistance	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Good
Thinners	DCT	DCT	DCT	DI Water	UAT	DCT	FTH	-	N/A
UV Trace	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Approvals	UL746		IEC61086		MIL-I-46058C	IPC-CC-830, UL 746		IPC-CC-830	

\*The SCC3 range may also be cured at ambient temperature however the solvent resistance will be reduced.

\*\*Please refer to the technical data sheet for more information on UV Curing Parameters.

## Aqueous Cleaning

		SWA	SWAJ	SWAS	SWAP	SWAT*	SWAX	SWMP
		Safewash Original	Safewash Jigwash	Safewash Super	Safewash Pressure-wash	Safewash Total	Safewash Xtra	Safewash Mechanical - Plus
Equipment	Ultrasonic	Yes	Yes	Best	Yes	Yes	Yes	Yes
	Pressure / Dishwasher / In-line	No	No	No	Yes	Best	Yes	No
	Spray under Immersion	Yes	Yes	Yes	Best	Yes	Yes	Yes
	Screen and Stencil Cleaner	No	No	No	Yes	Yes	Best	No
Soil Removal	Heavy Grease (& Organics)	Good	Good	Best	Good	Good	No	Excellent
	No Clean Fluxes	No	OK	Best	Good	Excellent	No	No
	Flux / Ionics	Good	Excellent	Best	Excellent	Excellent	Good	No
	Uncured Paste	OK	OK	Good	OK	Excellent	Best	No
	Uncured Adhesive	No	No	No	No	Good	Best	No
Other	Sensitive Metals	No	Yes	Yes	Yes	Yes	Yes	No
	Rinsability	Good	Best	Excellent	Good	Excellent	Good	Good
	Low Foam	No	No	No	Yes	Yes	Yes	No

\* Concentrate requires dilution, please refer to the Technical Data Sheet for more information.

## Solvent Cleaning

		HFFR	LFRR	FRC	ULS	DGC	IPA	ECSP	ULC	SSS
		Hexane-Free Flux Remover	Lead-Free Flux Residue Remover	Non-Flammable Flux Remover	Ultrasonic Cleaning Solvent	Non-Flammable Degreaser	Electronic Cleaning Solvent	Electronic Cleaning Solvent - Plus	Ultracleans Cleaning Solvent	Screen and Stencil Cleaner
Typical Properties	Density (g/ml)	0.78	0.80	1.33	0.80	1.33	0.80	0.80	0.80	1.02
	Flashpoint (°C)	7	-20	None*	-20	None*	12	-48	>60*	>60*
	Boiling Point (°C)	>80	>80	36	>80	36	82	36	>173	>100
	Vapour Pressure (kPa)	6.00	11.50	66.10	11.50	66.10	4.40	53.30	0.50	1.45
	Evaporation Rate (ether = 1)	11	16	<1	16	<1	6	1.5	66	>50
	TLV (ppm)	300	300	242	300	242	400	500	300	300
Soil Removal	Heavy Grease (& Organics)	Good	Good	Good	Best	Excellent	Good	Good	Excellent	No
	No Clean Fluxes	Excellent	Best	Good	No	No	No	No	No	No
	Flux / Ionics	Best	Excellent	Excellent	Good	Good	Good	Good	No	No
	Uncured Paste	Good	Good	Good	Good	Good	Good	Good	Excellent	Best
	Uncured Adhesive	No	No	No	No	No	No	No	No	Best

Evaporation Rate: The higher the number the slower the rate of evaporation. \*Classified as non-flammable.

## Contact Lubricants

	SGA	SGB	CG53A	CG60	CG70	CG80	EGF	SPG	CTG
<i>Specialist Property</i>	Low mV Drop	General Purpose	High Voltage	Plastics Compatibility	Low Temperature Performance	High Temperature Performance	High Temperature	Plastic Mechanical Lubrication	Moisture Resistance
Pour Point (base oil, °C IP-15)	-54	-37	-37	-54	-70	-35	-25	-57	-62
% Evaporation Weight Loss (IP-183 100°C)	0.90	0.93	0.21	0.30	0.30	0.20	<0.10	0.20	0.30
Drop Point (°C IP-31)	>250	>250	200	200	200	200	>250	>250	>200
Penetration (Worked, Cone, 20°C IP-50)	320	320	320	330	320	320	280	320	330
Temperature Range (°C)	-40 to +125	-35 to +130	-35 to +130	-45 to +130	-55 to +130	-30 to +160	-25 to +300	-40 to +125	-50 to +130
Mechanical Lubrication	Good	Good	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Good
Electrical Performance	Excellent	Good	Good	Excellent	Excellent	Excellent	Good	OK	Excellent
Humidity Resistance*	OK	Good	Excellent	Excellent	Good	Excellent	OK	Good	Best
Plastics Compatibility**	Poor	OK	OK	Excellent	Excellent	OK	Excellent	Excellent	Excellent
UV Trace	No	No	No	Yes	Yes	Yes	No	No	No
Oil Version Available	SOA	SOB/ EML	No	No	CO70	No	EOF/ DOF	No	No

\*Based on accelerated testing. \*\*Compatibility may differ from quoted results – Testing should always take place prior to production.

## Polyurethane Resins

	UR5041	UR5048	UR5044	UR5528	UR5562	UR5633	UR5604
<i>Specialist Property</i>	Water Resistance	Soft, Low Stress	Soft, Re-enterable	Tough, High Adhesion	Optically Clear	Thermally Conductive	Tough, Flexible
Colour (Mixed System)	Black	Clear Amber	Dark Blue	Black	Water White	Black	Black
Cured Density (g/ml)	1.18	0.95	1.49	1.07	1.02	1.65	1.54
Mixed System Viscosity (mPa s @ 23°C)	2500	980	3400	2000	300	30000	2000
Mix Ratio by Weight (by Volume)	3.6:1 (3.9:1)	14:1 (19:1)	13.4:1 (20:1)	2.4:1 (2.9:1)	2.2:1 (2.3:1)	12.2:1 (8.8:1)	5.2:1 (3.9:1)
Usable Life (Minutes @ 23°C)	20	20	25	20	17	15	40
Gel Time (Minutes @ 23°C)	60	40	40	35	22	40	90
Cure Time (Hours @ 23°C/60°C)	24/4	24/4	24/3	24/5	24/4	24/4	24/3
Shore Hardness	A85	A12	A40	D57	A95	A90	A75
Thermal Conductivity (W/m.K)	0.25	0.20	0.25	0.25	0.20	1.24	0.45
Temperature Range (°C)	-60 to +125	-60 to +100	-60 to +120	-50 to +125	-40 to +120	-50 to +125	-40 to +130
Maximum Temperature - Short Term (°C)	+130	+100	+130	+130	+130	+130	+155
Dielectric Strength (kV/mm)	20	18	18	25	11	18	18
Volume Resistivity (Ω-cm)	10 <sup>15</sup>	10 <sup>14</sup>	10 <sup>10</sup>	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>14</sup>
Flame Retardency Level	-	-	V-0	-	-	V-0	V-0
UL94 Approval	No	No	Yes	No	No	No	Yes
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes

For exact calculated ratios please see the technical data sheet.

## Epoxy Resin

	ER2188	ER2220	ER2183	ER2218	ER1426	ER1450	ER1122
<i>Specialist Property</i>	General Purpose	High Thermal Conductivity	Low Viscosity, Thermally Conductive	High Temperature Stability	Optically Clear	Very Low Viscosity	Excellent Adhesion
Colour (Mixed System)	Black	Grey	Black	Black	Water white	White	Clear Amber
Cured Density (g/ml)	1.69	2.22	1.95	1.16	1.05	1.10	1.05
Mixed System Viscosity (mPa s @ 23°C)	9000	15000	5000	500	100	250	12000
Mix Ratio by Weight (by Volume)	11:1 (5.5:1)	2.8:1 (8.2:1)	12.8:1 (5.6:1)	3.6:1 (2.8:1)	4:1 (3.4:1)	2.5:1 (2.2:1)	1:1 (0.8:1)
Usable Life (Minutes @ 23°C)	60	120	120	40	120	15	90
Gel Time (@ 23°C)	2.5 hrs	3.0 hrs	7.0 hrs	50 mins	4.0 hrs	30 mins	4 hours
Cure Time (Hours @ 23°C/60°C)	24/2	24/4	24/4	24/4	36/8	12/2	48/4
Thermal Conductivity (W/m.K)	0.91	1.54	1.10	0.28	0.20	0.20	0.20
Temperature Range (°C)	-40 to +120	-40 to +130	-40 to +130	-50 to +150	-40 to +120	-50 to +130	-40 to +120
Maximum Temperature – Short Term (°C)	+140	+150	+150	+245	+130	+150	+140
Dielectric Strength (kV/mm)	10	10	10	10	10	10	12
Volume Resistivity (Ω-cm)	10 <sup>14</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>15</sup>	10 <sup>14</sup>
Shore Hardness	D85	D90	D90	D55	D85	D50	D80
Flame Retardency Level	V-0	V-0	V-0	V-0	-	-	-
UL94 Approval	Yes	No	No	No	No	No	No
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes

For exact calculated ratios please see the technical data sheet.

## Silicone Compounds

	SC2001	SC2001FD	SC2003	SC3001
<i>Specialist Property</i>	High Temperature Resistance	Fast Cure	Thixotropic	Optically Clear
Colour (Mixed System)	Dark Grey	Dark Grey	Dark Grey	Optically Clear
Cured Density (g/ml)	1.40	1.15	1.60	1.04
Mixed System Viscosity (mPa s @ 23°C)	3500	1800	30000	1800
Mix Ratio by Weight (by Volume)	1:1 (1:1)	1:1 (1:1)	1:1 (1:1)	13:1 (12:1)
Usable Life (Minutes @ 23°C)	30	4	40	30*
Gel Time (Minutes @ 23°C)	60	8	80	180*
Cure Time (Hours @ 23°C)	24	4	24	24*
Shore Hardness	A50	A40	A50	A20
Thermal Conductivity (W/m.K)	0.6	0.4	0.8	0.2
Temperature Range (°C)	-50 to +200	-45 to +200	-60 to +200	-60 to +200
Maximum Temperature - Short Term (°C)	+225	+225	+225	+250
Dielectric Strength (kV/mm)	20	21	20	-
Volume Resistivity (Ω-cm)	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>14</sup>
Flame Retardency Level	V-0	V-0	V-0	HB
UL94 Approval	No	No	No	No
RoHS Compliant	Yes	Yes	Yes	Yes

\*Cure times will be dependent on ambient humidity.

For exact calculated ratios please see the technical data sheet.



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