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Electrically Conductive Adhesives



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ELECTRICALLY CONDUCTIVE ADHESIVES

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Electrically conductive epoxy adhesives are used for assembly and also repair of electronics. When cured the smooth silver pastes form very hard wearing highly conductive polymers which adhere strongly to glass, metals and most plastics used in electronic assembly. As a cold solder they provide electrical continuity like traditional soldering, but without heat stress and adhere to materials such as conductive polymers where adhesion with solder is not usually possible.

As a 2 part system, they have a 1.1 mix ratio and are available in 10 minute or 4 hour working times, with high or extreme conductivity. For quick fixes, or when room temperature cure is required, the 10 minute working time is sufficient, but when extended time is required the 4 hour working time is ideal.

When electrical resistance is of primary concern, the extreme conductivity versions are the best choice. More economical and tougher, the high conductivity versions have slightly lower silver content.



Electrically Conductive Adhesive comparison Chart

Uncured Working Properties	FS-8330	FS-8330S	FS-8331	FS-8331S
Mix Ratio by Volume (A:B)	1:1	1:1	1:1	1:1
Working Time	10 minutes	4 hours	10 minutes	4 hours
Full Cure @22°C	24 hours	N/A	24 hours	N/A
Full Cure @65°C	20 minutes	2 hours	15 minutes	2 hours
Shelf Life	≥3 years	≥3 years	≥3 years	≥3 years
Cured Properties				
Colour	Silver Grey	Silver Grey	Silver Grey	Silver Grey
Density	3.3g/ml	2.82g/ml	2.44g/ml	2.19g/ml
Hardness	83D	73D	70D	73D
Outgassing Total Mass Loss @24 hours	N/A	0.40%	6.27%	0.43%
Mechanical Properties				
Tensile Strength	6.3N/mm ²	9.0N/mm	6.3N/mm ²	14.0N/mm ²
Elongation %	N/A	7.8%	0.3%	5.3%
Compressive Strength	18.0N/mm ²	36.0M/mm ²	13.0N/mm ²	65.0N/mm ²
Lap Shear Strength*	6.5N/mm ²	1.3N/mm ²	8.0N/mm ^{2**}	1.1N/mm ²
Electrical Properties				
Volume Resistivity	0.0010Ω.cm	0.0007Ω.cm	0.0007Ω.cm	0.0006Ω.cm
Thermal Properties				
Glass Transition Temperature (Tg)	51°C	34°C	50°C	34°C
CTE prior Tg	91ppm/°C	97ppm/°C	54ppm/°C	78ppm/°C
CTE after Tg	278ppm/°C	208ppm/°C	169ppm/°C	158ppm/°C
Thermal Conductivity @25°C	1.63W/mK	1.75W/mK	0.90W/mK	0.85W/mK
Specific Heat @25°C	0.56J/gK	0.79J/gK	N/A	0.90J/gK

*Tested with stainless steel **Tested with aluminium N/A = Not available

Features and Benefits

- 1:1 mix ratios
- Excellent electrical conductivity
- Excellent thermal conductivity
- Store at room temperature
- Strong resistance to water, acids, aliphatic hydrocarbons and brine

Applications

- At printed circuit board (PCB) level for grounding and electromagnetic interference/radio frequency interference (EMI/RFI) shielding
- Bonding heat sensitive electronics
- Bonding to conductive polymers
- Cold soldering repairs



FS-8330 – SILVER CONDUCTIVE EPOXY – EXTREME CONDUCTIVITY - 10 MINUTE WORKING TIME

- 1.1 mix ratio
- Working time 10 minutes
- Cure time 24 hours at room temperature or 15 minutes at 65°C
- Electrical resistivity 0.0010Ω.cm
- Thermal conductivity 1.6W/mK

How to Order

Part No.	Packaging	Net Volume	Net Weight
FS-8330-19G	2 Syringes	6ml	19g
FS-8330-50ML	Kit (2 Jars)	50ml	157g

FS-8330S – SILVER CONDUCTIVE EPOXY – EXTREME CONDUCTIVITY – 4 HOUR WORKING TIME

- 1.1 mix ratio
- Working time 4 hours
- Cure time 2 hours at 65°C (heat cure only)
- Electrical resistivity 0.0007Ω.cm
- Thermal conductivity 1.75W/mK

How to Order

Part No.	Packaging	Net Volume	Net Weight
FS-8330S-21G	2 Syringes	6ml	18.7g
FS-8330S-50ML	Kit (2 Jars)	50ml	156g



FS-8331 – SILVER CONDUCTIVE EPOXY – HIGH CONDUCTIVITY – 10 MINUTE WORKING TIME

- 1.1 mix ratio
- Working time 10 minutes
- Cure time 24 hours at room temperature or 15 minutes at 65°C
- Electrical resistivity 0.007Ω.cm
- Thermal conductivity 0.90W/mK

How to Order

Part No.	Packaging	Net Volume	Net Weight
FS-8331-14G	2 Syringes	6ml	14.4g
FS-8331-50ML	Kit (2 Jars)	53ml	128g

FS-8331S – SILVER CONDUCTIVE EPOXY – HIGH CONDUCTIVITY – 4 HOUR WORKING TIME

- 1.1 mix ratio
- Working time 4 hours
- Cure time 2 hours at 65°C (heat cure only)
- Electrical resistivity 0.060Ω.cm
- Thermal conductivity 0.85W/mK

How to Order

Part No.	Packaging	Net Volume	Net Weight
FS-8331S-15G	2 Syringes	6ml	14.1 g
FS-8331S-50ML	Kit (2 Jars)	50ml	123g

All technical data herein is accurate to the best of our knowledge based on our most up to date testing information and material specifications. This information is not presented as a warranty or guarantee and is not intended to be all inclusive as to conditions of use. The data herein represents typical properties and is not to be used as a basis for a specification