

Technical Data Sheet

Electronic Component Materials Termination Pastes for Chip Components or Ceramic Devices

Application

Ferro offers a broad selection of conductor pastes suitable for many applications in multilayer and ceramic chip components. Ferro's in-house metal and glass formulation and R&D enables

us to tailor pastes to meet special requirements, including working closely with customers to develop the optimum processing methods such as dipping, drying and firing.

Platable Ag Termination Pastes for Passive Components

Product Code	TM63-150	61220004	61710070	61710074	61720012
Typical Applications	Ferrite, MLCC and BaTiO ₃ Electro-ceramics	Various Electro-ceramics e.g. Al ₂ O ₃ , PZT	MLCC and BaTiO ₃ Electro-ceramics	NTC Chip Components	Varistors, MLCC and BaTiO ₃ Electro-ceramics
Metal Composition	100% Ag	100% Ag	100% Ag	100% Ag	100% Ag
Application Method	Dipping	Spraying or Brushing	Dipping	Dipping	Dipping
RoHS Compliant	Yes	Yes	Yes	Yes	Yes
Typical Formulation Properties					
Viscosity in Pa-s at 25°C	42 - 52	57 - 69	15 - 18.5	29 - 38	17.5 - 22.5
Weight-% Solids Content	75.5	66.2	72.0	78.4	77.5
Weight-% Metals Content	73.0	62.0	69.6	72.3	75.0
Typical Processing Parameters					
Solvent Loss Replacement Additive	M1031	68100223	68100281	68100220	68100170
Drying (Peak Temp / Time)	120°C / 10-15 min	110°C / 10 min	150°C / 10 min	150°C / 10 min	150°C / 10 min
Firing (Peak Temp / Time)	650-730°C / 8-10 min	730-830°C / 8-10 min	730-780°C / 8-10 min	660-700°C / 8-10 min	600-650°C / 8-10 min

Platable Ag/Pd Termination Pastes for Passive Components

Product Code	TM64-118	TM64-121	TM64-122
Typical Applications	Ferrites, Varistors, MLCC and Other BaTiO ₃ Electro-ceramics	Ferrites, Varistors, MLCC and Other BaTiO ₃ Electro-ceramics	Ferrites, Varistors, MLCC and Other BaTiO ₃ Electro-ceramics
Metal Composition	95Ag/5Pd	98Ag/2Pd	99.5Ag/0.5Pd
Application Method	Dipping	Dipping	Dipping
RoHS Compliant	Yes	Yes	Yes
Typical Formulation Properties			
Viscosity in Pa-s at 25°C	25 - 35	35 - 42	28 - 35
Weight-% Solids Content	73.0	75.0	77.0
Weight-% Metals Content	71.0	71.0	70.5
Typical Processing Parameters			
Solvent Loss Replacement Additive	M1183	M1183	M1183
Drying (Peak Temp / Time)	120°C / 10-15 min	120°C / 10-15 min	120°C / 10-15 min
Firing (Peak Temp / Time)	730-780°C / 8-10 min	700-760°C / 8-10 min	650-710°C / 8-10 min

Solderable Termination Pastes for Passive Components

Product Code	61220004	61901445	64770016	64770020	64770018	T2012
Typical Applications	Various Electro-ceramics e.g. Al ₂ O ₃ , PZT	NTC, MLCC and BaTiO ₃ Electro-ceramics	NTC, MLCC and BaTiO ₃ Electro-ceramics	NTC, MLCC and BaTiO ₃ Electro-ceramics	NTC, MLCC and BaTiO ₃ Electro-ceramics	MLCC and BaTiO ₃ Electro-ceramics
Metal Composition	100% Ag	100% Ag	75Ag/25Pd	80Ag/20Pd	78Ag/19Pd/3Pt	100% Ag
Application Method	Spraying or Brushing	Dipping	Dipping	Dipping	Dipping	Dipping
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	No
Typical Formulation Properties						
Viscosity in Pa-s at 25°C	57 - 69	18 - 26	12.8 - 17.2	11 - 15	9.0 - 12.4	30
Weight-% Solids Content	66.2	75.0	80.0	78.2	80.2	76.0
Weight-% Metals Content	62.0	70.0	70.0	66.2	68.0	66.2
Typical Processing Parameters						
Solvent Loss Replacement Additive	68100223	68100170	68100170	68100063	68100063	M1003
Drying (Peak Temp / Time)	110°C / 10 min	150°C / 10 min	150°C / 10 min	150°C / 10 min	150°C / 10 min	150°C / 10 min
Firing (Peak Temp / Time)	730-830°C / 8-10 min	780-800°C / 8-10 min	780-850°C / 8-10 min	650-750°C / 8-10 min	740-780°C / 8-10 min	740-780°C / 8-10 min

Termination Pastes for Specific Applications

Product Code	64770027	T2018	TM50-090
Specific Application	Termination Interface for Conductive Adhesives	PME MLCC Requiring High Leach Resistance	BME MLCC Applications
Metal Composition	95Ag/5Pd	80Ag/20Pd	100% Cu
Application Method	Dipping	Dipping	Dipping
Platability	Not Platable	No	Platable
Solderability	Not Solderable	Excellent	Not Solderable
RoHS Compliant	Yes	No	Yes
Typical Formulation Properties			
Viscosity in Pa-s at 25°C	17.0 - 20.5	20	20 - 30
Weight-% Solids Content	76.1	76.5	77.0
Weight-% Metals Content	72.0	66.9	71.0
Typical Processing Parameters			
Solvent Loss Replacement Additive	68100102	M1010	M1028
Drying (Peak Temp / Time)	150°C / 10 min	150°C / 10 min	120°C / 10-15 min
Firing (Peak Temp / Atmosphere/ Time)	790-820°C / 8-10 min	740-780°C / 8-10 min	*835-845°C / 8-10 min

* Reduced pO₂ atmosphere required



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