Solder paste NP406-MGM555-GK

GENMA EUROPE

Product description

GENMA SMD solder paste – NP406-MGM555-GK is a special solder paste for highly reliable solder connections. The indium containing metal alloy convinces with its excellent thermal cycle resistance. As opposed to the SAC305 standard alloy, it features a clearly higher long-term durability of the soldering joints, however, its melting temperature is significant lower. Its consistent viscosity guarantees outstanding printing properties. Based on its good wetting properties, BGAs can also be soldered perfectly. Hardly any voids in the solder connections. Cleaning after soldering is not necessary. The solder paste can be soldered under air or nitrogen reflow, although nitrogen reflow should be preferred. Main applications: Electronic assemblies with higher requirements.

Technical properties

	Specific value	Testing method
Alloy	Sn 90,0 / Ag 3,5 / In 6,0 / Bi 0,5	
Melting temperature range	196 - 206	IEC61189-11
Powder size (µm)	22 - 45, type 3	IPC-TM-650-2.2.14.2
Viscosity (Pa · s)	200 ± 20	IPC-TM-650-2.4.34.3
Flux content (wt %)	10,5 ± 1	IPC-TM-650-2.3.34.1
Flux type	ROL0, no clean	IPC-J-STD-004B
Printing pitch (mm)	0,4 - 0,5	
Halide content (wt %)	0,01 max	Flask combustion method + ion chromatography
Slump in print (mm)	≤ 0,2	IPC-TM-650-2.4.35
Slump in heat (mm)	≤ 0,3	IPC-TM-650-2.4.35 (150°C / 60sec)
Insulation resistance (Ω)	≥ 1 x 10^{11} (40°C 90 % r. L)	IPC-TM-650-2.6.3.3
Insulation resistance (Ω)	≥ 5 x 10^{8} (85°C 85 % r. L)	IPC-TM-650-2.6.3.3
Migration test	No migration	IPC-TM-650-2.6.14.1
Copper mirror test	No corrosion	IPC-TM-650-2.3.32
Packaging	Jar (0,5 kg) Semco cartridge (0,65 kg, 1,2 kg)	
Shelf life	4 months at 0- 10°C	
Transport	keep cool	
Tempering the solder paste	Set to room temperature before opening to avoid condensation.	
Recommended printing speed (mm/s)	20 - 80	
Recommended temperature during print (°C)	25 ± 3	
Recommended relative humidity in % during print	50 ± 20	

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Compliance

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Conform with RoHS-Regulation 2011/65/EU and 2015/863/EU.

Contains no substances (SVHC-list) more than threshold (0,1%) according to REACH legislation EG Nr. 1907/2006.

Contains no substances as defined by the Toxic Substance Control Act (TSCA) of the United States Environmental Protection Agency.

Contains no substances according to POP Regulation EU 2019/1021.

Contains no Per- and PolyFuluoroAlkyl Substances (PFAS).

Contains no phthalates or latex.

Contains no substances according to California Proposition 65.

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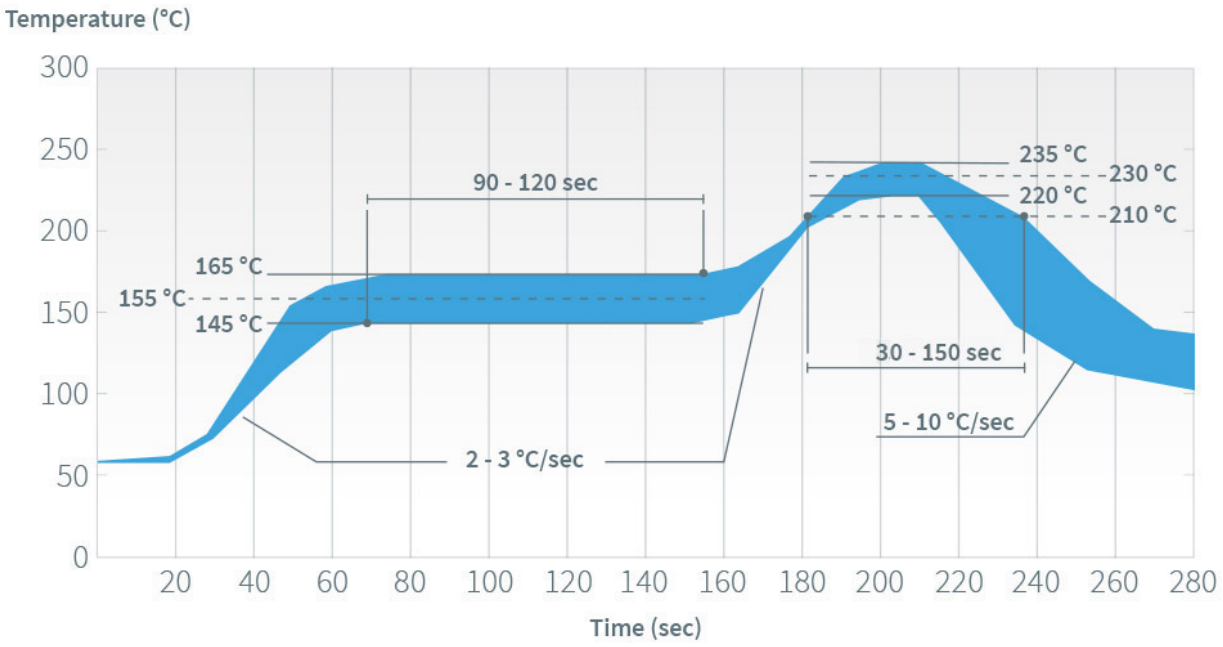
Recommended Reflow Profile



Preheating

The temperature increase should be 2°C to 3°C/sec until the preheating zone is reached. If the temperature rises too quickly this may cause a running of the solder paste.

To achieve a temperature spread (⊿t) on the circuit board that is as limited as possible, the temperature in the preheating zone should be between 148 and 165°C and the preheating time should be 90 to 120 seconds. If the temperature is too low or the preheating time too short, the temperature spread (⊿t) on the circuit board will be too high. If the temperature is too high and the preheating time too long the activators will get lost which may lead to poor melting of the solder paste.

Reflow peak

We recommend keeping the temperature at 210°C for 30 to 50 seconds, if possible. If this is impossible, a temperature of up to 250°C can be maintained for a shorter period of time. It must be ensured, however, that the components are suited for the higher temperature.

Cooling down

The cooling rate should be between 5 and 10°C/sec. If the cooling rate is too low components may be displaced or come up and reduce the strength of the solder connections. If the cooling rate is too high, however, components can be damaged through thermal shock.

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