ALPHA CVP-390V

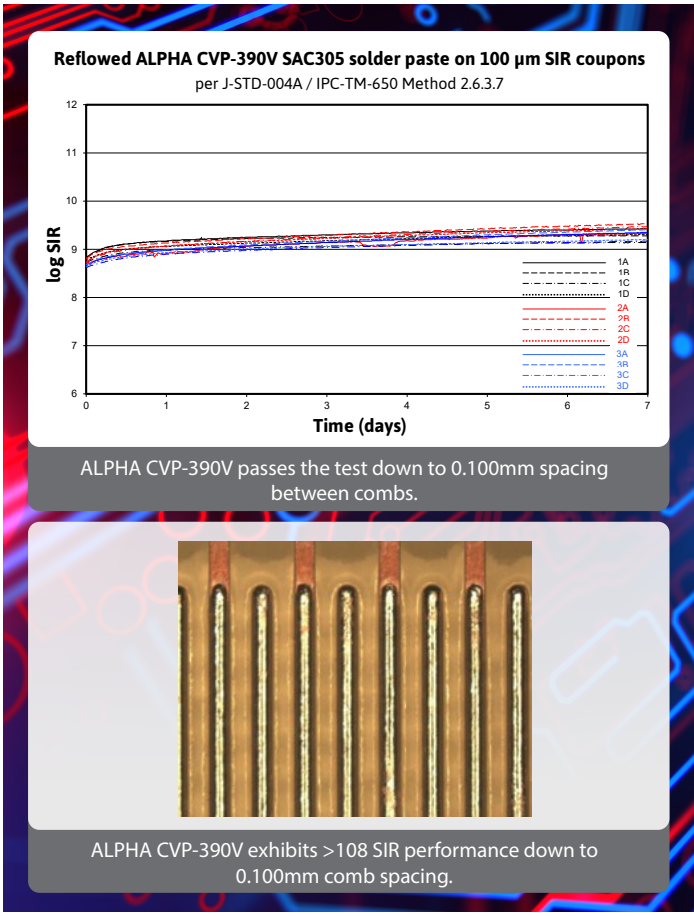
No-Clean, Lead-Free, Zero-Halogen Solder Paste

Widest print process window and superior electrochemical reliability

ALPHA CVP-390V is a lead-free, zero-halogen, no-clean solder paste designed to provide advanced electrochemical reliability in harsh operating conditions on fine pitched component packages. Its consistent print performance on all package configurations and board types, excellent transfer efficiency at AR>0.60, and wide reflow window on soak and ramp profiles enables maximum flexibility in manufacturing under all process conditions.

Assembly processes that can gain from ALPHA CVP-390V include:

- Assemblies requiring flexibility across multiple component types.
- High reliability applications requiring excellent electrochemical reliability on fine pitch components in harsh operating conditions.
- Assemblies requiring fine feature printability and increased manufacturing throughput.

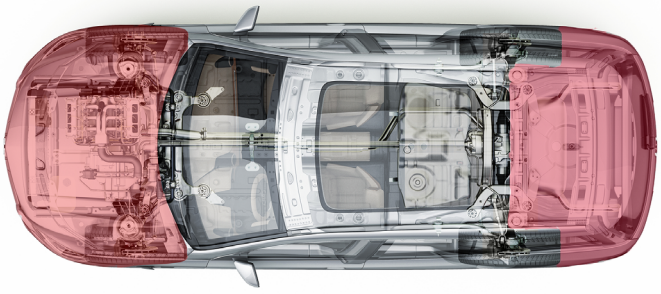


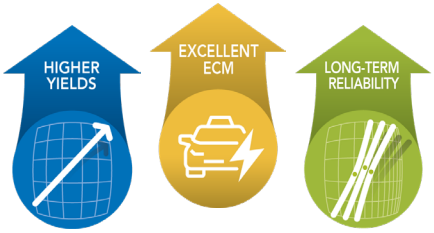
ALPHA CVP-390V passes the test down to 0.100mm spacing between combs.

ALPHA CVP-390V exhibits >108 SIR performance down to 0.100mm comb spacing.

Key Features

- Superior electrochemical performance on fine pitched components to ensure reliability on complex PCB assemblies.
- Ultimate flexibility in print and reflow process window.
- Excellent coalescence down to 170 µm apertures on high density assemblies.
- Exceptional pin testability to ensure first pass yields.
- Robust performance for consistency across all packaging configurations.
- Compatible with SAC305 and Innolot high reliability alloy.





*Zero-halogen is defined as halogen intentionally added to the formulation.

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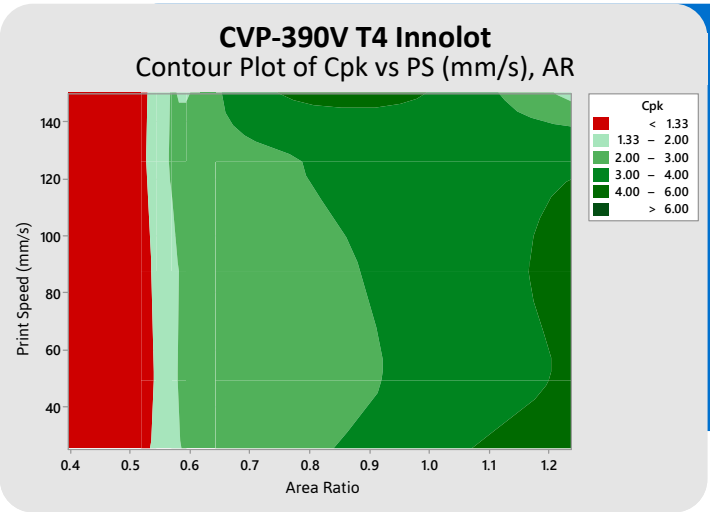

ALPHA CVP-390V maintains >1.66 Cpk for transfer efficiencies between 60%-120% on AR ≥ 0.6 across all print speed process conditions.

PERFORMANCE SUMMARY

PROCESS BENEFITS	PROPERTIES	PERFORMANCE CAPABILITIES
Print Process Window	Print Definition	Wide process window with excellent transfer efficiency at area ratio above 0.60
	Stencil Life	8 Hour stencil life at 25 °C/30%RH
	Print Speed Range	25 - 150 mm/s (1-6 in/s)
Reflow Process Yield	Reflow Environment	Air and nitrogen reflow capable
	Resistance to Voids	Meets IPC Class III requirements on BGA/LGA
	Random Solder Balls	Passes IPC J-STD-005A criteria
	Coalescence	Excellent coalescence down to 170 µm features
	Flux Residue Characteristics	Clear & light amber residue
Electrical Reliability	Automotive Damp Heat	≥108 Ohms for 6 days per IEC 6068-2-30
	IPC/JIS SIR	Passes SIR per IPC J-STD-004B/JIS Z 3197 down to 100 µm coupons
	Bono Corrosion	Passes Bono criteria with corrosion factor <2% for minimum 15 days
	Electromigration	Passes IPC-TM-650 Method 2.6.14.1 with no visual evidence of corrosion, discoloration or electromigration for minimum 596 hours
	Pin Testability	Excellent pin testability with >98% hits less than 5 Ohms resistance
	Classification	ROL0 as per J-STD-004B
Environmental	Halogen Content	Zero-halogen

MacDermid Alpha ELECTRONICS SOLUTIONS

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Alpha is a product brand of MacDermid Alpha Electronics Solutions.

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