# ALPHA® OM-565 HRL3

Low Temperature, No-Clean, High Reliability Solder Paste

## Enables lower peak reflow, lower total cost of ownership, and a reduction in warpage induced defects.

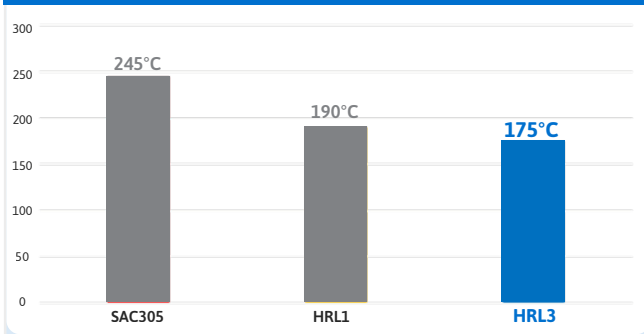
ALPHA OM-565 HRL3 low temperature solder paste is formulated for a broad range of assemblies to mitigate warpage induced defects in temperature sensitive chip-scale packages.

ALPHA OM-565 HRL3 is designed to enable target reflow temperatures of 175 °C with superior wettability to minimize post reflow defects such as Non-Wet-Open (NWO) and Head-in-Pillow (HiP).


**Enhanced Thermomechanical & Drop Shock Performance**

## Key Features

- Compatibility with HRL3 alloy for enhanced thermomechanical and drop shock reliability
- HRL3 alloy enables peak reflow temperature of 175 °C to mitigate warpage induced defects
- 175 °C peak reflow increases energy efficiency and cost savings
- Superior HiP/NWO performance
- Compatibility with contact rework applications
- 8-hour stencil life in ambient and elevated conditions




**HRL3 Alloy Enables Target Peak Reflow 175°C**


*Zero-halogen is defined as no halogen intentionally added to the formulation.

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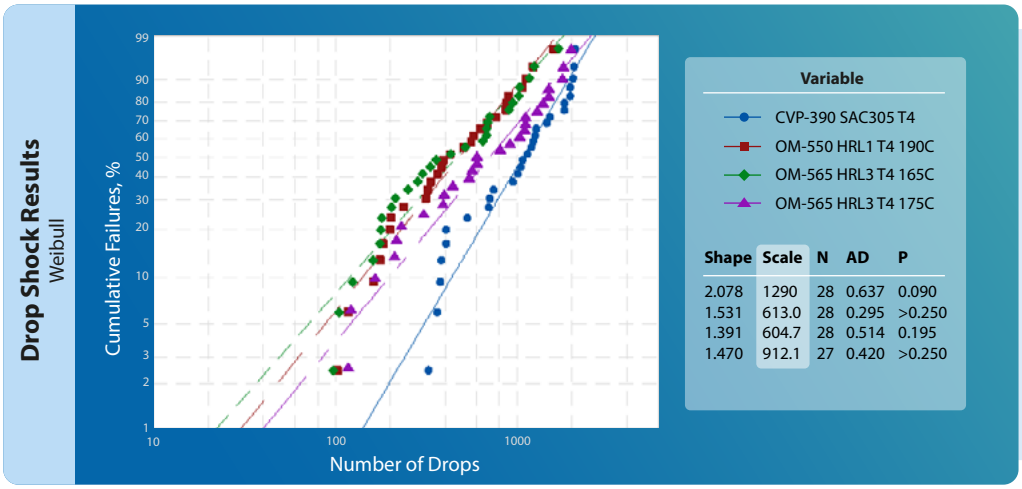


**Ductility of HRL3 alloy reflowed at 175 °C peak enhances characteristic life of existing low temperature solutions.**

## PERFORMANCE SUMMARY

| PROCESS BENEFITS | PROPERTIES | PERFORMANCE CAPABILITIES |
|---|---|---|
| Print Process Window | Fine Feature Print Definition | Excellent print definition and consistent volumetric performance down to 01005 component size |
| | Stencil Life at Ambient Condition | 8-hour stencil life of continuous printing with consistent transfer efficiency at 25 °C/50% RH |
| | Stencil Life at Elevated Condition | 8-hour stencil life of continuous printing with consistent transfer efficiency at 32 °C/70% RH |
| | Print Speed Range | Wide print process window from 25 to 150 mm/s (1 to 6 in/s) at AR ≥0.59 |
| Reflow Process Yield | Reflow Environment | Air and nitrogen reflow capable |
| | Resistance to Voids | Meets IPC-7095 Class 3 classification on BGA |
| | Head-in-Pillow (HiP) | Excellent resistance to HiP |
| | Non-Wet-Open (NWO) | Excellent resistance to NWO |
| | Random Solder Balls | Passes IPC J-STD-005A criteria |
| | Coalescence | Excellent coalescence down to 215 µßm for T4 and 200 µm for T5 |
| | Flux Residue Characteristics | Clear, soft, and pin-testable |
| Electrical Reliability | Surface Insulation Resistance | Passes SIR per IPC J-STD-004B down to 100 µm coupons |
| | Electromigration | Passes IPC J-STD-004B with no visual evidence of corrosion, discoloration or electromigration for minimum 25 days |
| | Classification | ROL0 as per IPC J-STD-004B |
| Environmental | Halogen Content | Zero-Halogen |

The ALPHA HRL series of low temperature solders are an enabling technology that yields high reliability assemblies while reducing peak reflow temperatures. This enables lower overall energy consumption contributing to long-term environmental sustainability.

LONG-TERM SUSTAINABILITY

MacDermid Alpha ELECTRONICS SOLUTIONS

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SCAN THE CODE to know more

*Alpha and Kester are a product brand of MacDermid Alpha Electronics Solutions.*

**For more information, contact us at Assembly@MacDermidAlpha.com**