



# LOCTITE® GC 50 – THE GAME CHANGER

## JETTABLE, TYPE 5, TEMPERATURE STABLE SOLDER PASTE

The continuing miniaturization of electronic devices with larger I/O densities presents assembly process challenges. While many components have become smaller within high-density assemblies, they must often be integrated alongside larger parts, which pushes the limits of traditional stencil printing processes. Because of this limitation, assembly specialists are turning to solder paste jetting technology, as it allows for customized deposition consistency of both small and large material volumes for various component requirements.

Leveraging LOCTITE® GC solder paste technology, Henkel has developed a temperature stable solder paste capable of jetting repeatable solder deposits down to 290 µm. The stability of LOCTITE GC 50 solder paste extends its lifetime inside the jetting platform's ejector system at temperatures up to 28°C and allows for storage up to 12 months without impacting long-term reliability.



Henkel



## BENEFITS OF HIGH-SPEED JETTING

The jetting capability of *LOCTITE* GC 50 solder paste serves multiple functions to maximize production efficiency:

- Repair of misprinted boards
- Addition of solder paste to pre-printed PCBs
- Enables add-ons of different shapes and heights, eliminating the need for step stencils or preforms
- Reduces need for ultra-fine powder pastes for complex PCBs
- Overcomes board/component topography challenges by enhancing paste volume control with slump-less stacked deposition
- Fast prototype turnarounds
- Accelerated production of small-batch assemblies
- Reduces requirement for intricate stencil designs to overcome HDI challenges



## LOCTITE® GC 50 MATERIAL PROPERTIES

Attribute		Competitive Material	LOCTITE GC 50	LOCTITE GC 50 Benefits
Stability	Life in ejector head at 28°C	< 1 day in pause	> 1 week in pause	Stability and long ejector head life help reduce scrap and cost as compared to competitive materials that can harden within the ejector system.
		< 1 day in application	> 2 weeks in application	
	Refrigerated shelf-life	6 months	12 months	High, small-dot jetting $C_{pk}$ and stability enable reliable and robust processes.
	Room temperature shelf-life	1 week	6 months	
Jetting	Smallest component	0402	0201	Capable of jetting down to 290 $\mu\text{m}$ pad sizes while competitive materials require finer powder particle sizes to achieve similar results.
	400 $\mu\text{m}$ diameter at 28°C	Diameter not suitable after 1 day of continuous jetting	Continuous 400 $\mu\text{m}$ jetting up to 2 weeks	Outperforms competitive materials, achieving consistent $C_{pk}$ of greater than 5.0 using standard Type 5 solder powder.
Reflow	Short, linear profile	Designed for nitrogen	Suitable for air or nitrogen	Excellent reflow performance in air or nitrogen resolves dewetting, coalescence and graping issues while meeting industry-standard low void levels and reducing cost.
	Long, hot profile	Nitrogen only		
Flux	IPC J-STD 004B Classification	ROL1/ROLO	ROLO	Halogen-free, enabling high surface insulation resistance (SIR).
	Tackiness	Acceptable < 24 hours	Maintained > 48 hours	Excellent tackiness improves production yields for small components such as chip resistors.
	Cleanability	Challenging	Easy	Ease of cleaning reduces cycle time.

**Across the Board,  
Around the Globe.**  
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