



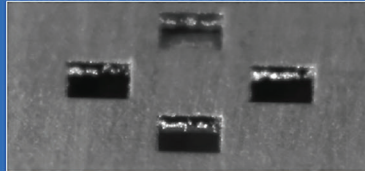
# Almit's worldwide innovation: MR-NH

## Small area ratio, big performance

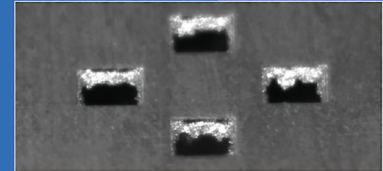
### <sup>1</sup> Testbedingungen / Test conditions

|                    |                          |
|--------------------|--------------------------|
| High Speed Camera: | Photron FASTCAM Mini     |
| Screen printer:    | Panasonic SP60P-M        |
| Stencil thickness: | 150 µm                   |
| Squeegee:          | Metal                    |
| Squeegee speed:    | 50 mm/sec.               |
| Print pressure:    | $25 \times 10^{-2}$ N/mm |
| Clearance:         | -0.4 mm                  |
| Release speed:     | 7,5 mm/sec.              |

### MR-NH



### Standard-Lötpaste / Conventional



### <sup>2</sup> Testbedingungen / Test conditions

|                                   |   |
|-----------------------------------|---|
| HIROX Micro Digital Scope KH-7700 |   |
| Screen printer:                   | Panasonic SP60P-M                                       |
| Stencil thickness:                | 150 µm  |
| Squeegee:                         | Metal   |
| Squeegee speed:                   | 50 mm/sec.  |
| Print pressure:                   | $25 \times 10^{-2}$ N/mm                                |
| Clearance:                        | -0.4 mm   |
| Release speed:                    | MR-NH (7,5 mm/sec.),<br>Standard-Lötpaste (3,0 mm/sec.) |

### 0201 Chip vergrößert / chip enlarged



MR-NH



Conventional

In the automotive sector, electronics is more frequently directly placed at the power unit, forcing downsizing of the control units. Moreover, in module design, a high mix of module sizes can be found more and more frequently. To guarantee a sufficient amount of solder paste for bigger modules, metal stencils with a thickness of up to 150 µm are used for these applications. This often causes difficulties regarding the release properties of smaller modules, as for example, of 0201-chip modules. In IPC guidelines, the area ratio value is recommended to be higher than 0,66 to maintain good release properties. The experience shows that an area ratio smaller than 0,66 leads to a worse soldering paste printing or worse release properties. However, there are many application examples where the area ratio is already now out of the recommended range, whereby deficient release properties occur. How can this issue be solved?

Almit's lead-free solder paste MR-NH sets new standards here: due to the special flux characteristics of MR-NH, optimal results can be guaranteed, even for applications with an area ratio smaller 0,66 - regarding the print image as well as the release properties. Down to an area ratio of 0,43, the MR-NH solder paste is compatible and so enables an application for nearly all stencils and module combinations. Different tests in comparison with a standard solder paste prove the quality advantage of MR-NH. In comparison tests

regarding the release properties, MR-NH convinces with uniform, equally formed solder deposits. During the printing process with MR-NH, remarkably less solder paste remains stuck to the stencil than with a standard solder paste. Also in comparison of the printing contours and the printing characteristics, MR-NH is ahead. MR-NH shows more equal, firmer contours than the standard product and provides even at a stencil thickness of  $t = 150 \mu\text{m}$  an outstanding high volume rate.

Small area ratio — big performance: discover with MR-NH a new dimension in SMT production!

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