Improving sustainability by novel Phosphate Processes

For more than 130 years, it has been Henkel’s mission to provide customers not only with best-in-class products, but also to enable them to work in a sustainable manner. It is our ambition to reduce Henkel’s and our customer’s environmental footprint by constantly developing innovative solutions.

Zinc Phosphating is the standard MPT-process for automotive components made of steel and galvanized substrates, due to its unsurpassed corrosion performance in combination with various paint systems. Henkel is striving to further optimize this process in order to ease the handling of the products, reducing the environmental footprint and generating process costs savings.

PROCESS SEQUENCE

Cleaning Rinse Activation Zinc-Phosphate Rinse Passivation Rinse

Learn more at henkel-adhesives.com

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials used as well as to varying working conditions beyond our control we strictly recommend to carry out intensive trials to test the suitability of our products with regard to the required processes and applications. We do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention. The information is protected by copyright. In particular, any reproductions, adaptations, translations, storage and processing in other media, including storage or processing by electronic means, enjoy copyright protection. Any exploitation in whole or in part thereof shall require the prior written consent of Henkel AG & Co. KGaA. Except as otherwise noted, all marks used in this document are trademarks and/or registered trademarks of Henkel and/or its affiliates in the US, Germany, and elsewhere. © Henkel AG & Co. KGaA, DSGN0004659 (3/20)
An important lever to improve performance of the process is the type of conditioner technology used. Henkel’s new generation of Zn-Phosphate-based conditioners are combining the performance of solid Titanium-Phosphate based conditioners with the benefits of liquid Zinc Phosphate-based conditioners.

**Performance Characteristics**

- Improved coating formation on passives substrates and in box sections
- Excellent corrosion protection at low Zinc Phosphate coating weights and improved coating density
- Improved stable process even with up to 12 months bath lifetime
- Significantly less water consumption and less wastewater generation

<table>
<thead>
<tr>
<th>Corrosion Performance</th>
<th>Coating in box sections</th>
<th>Consumption</th>
<th>Water savings</th>
<th>Ease of dosing</th>
<th>Typical bath life</th>
<th>Risk of biological growth</th>
<th>Shelf life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder conditioner</td>
<td>Very good</td>
<td>Good</td>
<td>Normal</td>
<td>Careful powder dosing needed, or premix tanks</td>
<td>Weeks</td>
<td>Low</td>
<td>24 months</td>
</tr>
<tr>
<td>Liquid Zinc Phosphate conditioner</td>
<td>Very good</td>
<td>Very good</td>
<td>Normal</td>
<td>Medium-high</td>
<td>Yes, but 2 components</td>
<td>Months</td>
<td>Possible</td>
</tr>
<tr>
<td>Liquid Zinc Phosphate New Generation conditioner</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Very low</td>
<td>High</td>
<td>Yes, only 1 component</td>
<td>Up to years</td>
<td>Very low</td>
</tr>
</tbody>
</table>

**Highlights of the new BONDERITE M-AC AL2000**

The new liquid activator based on Zn Phosphate:

- Superior performance compared to other activator technologies
- Enhanced handling in application and storage
- Enables low temperature Zn-Phosphating

**Application Benefits:**

- Significantly higher water savings
- Reduced maintenance
- Wide operating window
- Up to 45 seconds less processing time
- Suitable for dip & spray application
- Fits the TwoStep or FlexProcess
- Improved stable process with up to 12 months bath lifetime

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