BONDERITE

Technical Data Sheet

BONDERITE M-NT 400

Known as Alodine 400
November 2022

PRODUCT DESCRIPTION

BONDERITE M-NT 400 provides the following product characteristics:

Technology	Surface Treatment
Product Type	Conversion coating
Application	Steel, zinc and aluminium, Rinse & No-Rinse
Process components:	BONDERITE M-NT 400 BONDERITE M-NT 400 R-2 BONDERITE M-NT 400 R3 for spray BONDERITE M-NT 400 R IM for dip

BONDERITE M-NT 400 is a liquid product for a chrome-free conversion treatment of light metals as well as post passivation for phosphate layers. In aqueous solutions colourless conversion layers are produced on light metals in immersion and spray application. Both treatments provide an excellent corrosion resistance as well as very good adhesion properties for subsequent painting. BONDERITE M-NT 400 suitable to be used after preanodizing.

DIRECTIONS FOR USE

Preliminary Statement:
Prior to use it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed. Please also refer to the local safety instructions and contact Henkel for analytical support.

Bath Make-up:
For each 1,000 L of bath add to the DI-water whilst stirring:

BONDERITE M-NT 400 (immersion)	5 to 20 L
BONDERITE M-NT 400 (spray)	5 to 20 L

For Alumnium conversion coating adjustment of pH at make up is not needed.
For other use the pH-value should be adjusted with 3% Ammonia solution.

Changes in the above mentioned process parameters may be necessary. They have to be evaluated individually and documented specifically for each line.

Control Points:

	Conversion	**Post-Passivation**
pH-value	2.4 to 4.0	4.0 to 4.5
Temperature, °C	20 to 40	20 to 40
Time, sec	30 to 90	30 to 90
Spray pressure, bar	0.5 to 1.5	0.5 to 1.5
Conductivity, µS/cm	200 to 1,200	200 to 1,200

Process Description:
The typical operation method consists of the following steps:

1. Alkaline or acid etching
2. Rinsing
3. Acid Deoxidizing
4. Rinsing
5. Rinse with DI-Water
6. Conversion treatment with BONDERITE M-NT 400
7. Optional: Rinse, Humidifying nozzles (with DI water, < 30 microS/cm) or air blowing nozzles

Bath Maintenance:
The BONDERITE M-NT 400 bath is controlled by determination of the pH-value or the electrolytical conductivity.
The adjusted conductivity or pH-value of the passivation bath should be kept constant during the bath operation.
Iron and chromium ions in the passivation bath can impair the conversion layer quality.
The max. iron concentration should not increase 10 ppm and the max. chromium concentration should be less than 1 ppm.
BONDERITE M-NT 400 bath can also be monitored by photometric determination of titanium concentration.

Bath Replenishment:
<u>For conversion:</u>

The conductivity of the BONDERITE M-NT 400 bath decreases during the working process due to a product consumption.
An addition of the product adjustes the required conductivity.

If required, mainly in the spray lines, BONDERITE M-NT 400 R-2 can be used for a bath make up or replenishment in the conversion stage.
Our technical customer service will make for you a corresponding recommendation.

<u>For post-passivation:</u>

The pH-value of the BONDERITE M-NT 400 bath increases during the working process due to a product consumption.
An addition of the product adjustes the required pH-value.

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General Recommendation:
For the incoming BONDERITE M-NT 400 and BONDERITE M-NT 400 R-2 fluoride resistent plastic like hard PVC or PP should be chosen.

The bath containers for the BONDERITE M-NT 400 bath can be made of hard PVC (without softening agents) or stainless steel 1.4571 or 1.4301.

A different possibility would be the use of a steel container which has been lined with a fluoride resistant plastic.

Racks, fastening material and baskets should be made of aluminium, stainless steel (1.4571 or 1.4301) or plastic (hard PVC).

The spraying systems, pumps and heating facilities should be made of stainless steel (1.4571 or 1.4301).

BONDERITE M-NT 400 baths must be detoxificated and neutralized before adding them to the normal waste water.

Caution:
BONDERITE M-NT 400 and BONDERITE M-NT 400 R-2 contain anionic copolymers!
BONDERITE M-NT 400 and BONDERITE M-NT 400 R-2 contain complex fluoro compounds!
Watch safety precautions! Shield eyes with tightly fitting safety glasses, wear rubber gloves and chemical resistant safety clothes.
Avoid contact with skin! Do not inhale vapours!
Read the safety information on the product label!

Classification:
Please refer to the corresponding **Material Safety Data Sheets** for details on:
- **Hazards identification**
- **Transport information**
- **Regulatory information**

Storage:

Recommended Storage Temperature, °C	5 to 40
Shelf life, months (in unopened original packaging)	12

ADDITIONAL INFORMATION

Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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