

BONDERITE® M-NT 2011

April 2024

Product description

BONDERITE® M-NT 2011 provides the following product characteristics:

Technology	Metal pretreatment
Product type	NGC / Zirconium Technology
Application	Conversion coating
Process components	BONDERITE® M-NT 2011 BONDERITE® M-AD 700 BONDERITE® M-AD 252 BONDERITE® M-AD 338

BONDERITE® M-NT 2011 is a liquid pre-treatment product. It is phosphate-free, and specially developed for the treatment of steel, galvanised steel and aluminium. The pre-treatment agent is free of volatile organic compounds and significantly increases the durability of painted metal surfaces against corrosion. BONDERITE® M-NT 2011 is specially formulated to prevent flash rust corrosion. BONDERITE® M-NT 2011 is also frost resistant and has a long shelf life of 2 years. Compared to iron phosphating, BONDERITE® M-NT 2011 generally improves corrosion resistance and reduces operating costs. BONDERITE® M-NT 2011 can be applied by spraying or by immersion with a separate cleaning and heating step. Pre-treatment with BONDERITE® M-NT 2011 is compatible with all other types of coating.

Application areas:

BONDERITE® M-NT 2011 is used in spray- and spray/immersion processes. It must be combined with a suitable cleaning booster.

Pre-painting treatment of spare parts in automotive, appliances, metal furniture industries and, in general, on all pieces which are not much exposed to corrosive agent aggression (humidity, atmospheric conditions, etc.).

Technical data

Appearance	Clear liquid
Density at 20°C, g/cm ³ , DIN 51757	~1.03
pH-value (100 %)	1.2

Direction 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:

Fill ¾ of the bath with water (DI-water recommended).

For each 1,000 l of bath volume add to the agitated bath:

BONDERITE® M-NT 2011, l	3 to 10
BONDERITE® M-AD 700, ml	40 to 140 (if indicated by TCS)

Fill the bath to normal working level and slowly add BONDERITE® M-NT 2011 to adjust the pH to 4.5 to 4.6.

Operating data:

pH-value	4.5 to 5.2
Concentration Zr	0.1 to 0.65 Absorption at 450nm*
Treatment time, sec	20 to 120
Temperature, °C	RT (20 to 50)
Spray pressure, bar	0.5 to 1.5

*as described in following method

Within the preferred pH-ratio of 4.5 to 5.2 the concentration of BONDERITE® M-NT 2011 must be adapted to the process. The recommended concentration for every production line will depend on process time, geometry of the treated parts and other parameters. Typical values are 0.25 to 0.65. For some applications lower values can be used if indicated by TCS.

If the concentration of BONDERITE® M-NT 2011 lies within the recommended working range, the pH-value of the bath must be adjusted within the recommended range with BONDERITE® M-AD 252 (decrease the pH-value) or BONDERITE® M-AD 700 (increase the pH-value). Additionally, changes in the above mentioned process parameters may be necessary – they have to be evaluated individually and documented specifically for each production line.

Process description:

With alkaline degreasing – 5 zones

1. Alkaline degreasing
2. Rinse (industrial water)
3. Rinse (DI water)
4. Conversion bath (BONDERITE® M-NT 2011)
5. Rinse (DI water)
6. Drying (optional, depending on the paint system)

Bath monitoring:

The BONDERITE® M-NT 2011 bath is controlled by determination of the pH-value and concentration of BONDERITE® M-NT 2011.

pH-value:

The pH is determined using a fluoride stable pH meter standardized at pH 4 and 7.

pH range 4.6 to 5.2

Adjustment of the pH-value:

To reduce pH-value add BONDERITE® M-NT 2011 or BONDERITE® M-AD 252. To increase pH-value add BONDERITE® M-AD 700.

Determination of the concentration of BONDERITE® M-NT 2011 Photometer: HACH Pocket colorimeter II 450 nm:

Cell /vessel: Diameter 25.4 mm, cylinder cell.

Analyte: BONDERITE® M-NT 2011.

Reagents 908-1 and 908-2 should be stored at room temp. (+5 to 25°C) and protected from light.

Before the insertion into the photometer cell/vessels need to be closed tightly.

Otherwise the operator and/or the photometer may be harmed.

The product concentration is in its target range, if the displayed measurement value is within the defined limits. For each missing 0.05 unit of extinction have to be added per 1,000 litre bath solution:

BONDERITE® M-NT 2011, kg 1

Special remarks:

The waste water treatment and disposal must comply with the local discharge regulation.

Classification:

Please refer to the corresponding **Material Safety Data Sheets** for details on:

Hazardous Information

Transport Regulations

Safety Regulations

Storage:

Recommended storage temperature, °C 0 to 40

Shelf-life (in unopened original packaging), months 36

Preparation of the HACH Pocket colorimeter II 450 nm:

- Turning-on of the device.
- For the zero compensation fill the 25.4 mm cell with DI water.
- Remove the instrument cap from the pocket colorimeter, and insert the cell with the DI water into the cell compartment.
- Use the instrument cap as a light shield during measurements.
- Press the ZERO key. The meter should read 0.0. If the meter does not read 0.0, press the ZERO key again.

Preparation of the sample:

- Pipette 50 mL of Reagent 908-1 into a 100 mL beaker.
- Add 0.4 mL of the bath sample to the beaker (use an accurate pipette) and mix the solution gently.
- Add 2.0 mL of Reagent 908-2 and mix the solution gently.
- Decant the mixture into a cell and insert the cell into the cell compartment. Use the instrument cap as a light shield during measurements. Press the READ key. Multiply the reading by the correction factor (see below) and record it as absorbance. This value corresponds of the active component in BONDERITE® M-NT 2011.

*When absorbance is higher than 0.45 it's advisable to take 0.2 ml and multiply abs x 2.

Determination of the correction factor:

- Prepare 30 ppm Zr solution obtained by dilution of 1,000 ppm ICP Standard-solution (Merck; Art-Nr.1.70370.0100).
- Pipette 50 mL of Reagent 908-1 into a 100 mL beaker.
- Add 0.4 mL of the bath sample to the beaker (use an accurate pipette) and mix the solution gently.
- Add 2.0 mL of Reagent 908-2 and mix the solution gently.
- Decant the mixture into a cell and insert the cell into the cell compartment. Use the instrument cap as a light shield during measurements. Press the READ key and take the result (A).

0,228

Correction factor = $\frac{0,228}{\text{Extinction (A)}}$



Additional information

Disclaimer

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