

BONDERITE® M-NT 1800 MU A

Known as TECTALIS 1800
February 2024

Product description

BONDERITE® M-NT 1800 MU A provides the following product characteristics:

Technology	Chromium free
Product type	NGC / Zirconium Technology
Application	Conversion coating
Process components	BONDERITE® M-NT 1800 MU A BONDERITE® M-AD 426 (optional) BONDERITE® M-NT 1800 R series BONDERITE® M-AD 101 BONDERITE® M-AD 700 BONDERITE® M-AD 120

BONDERITE® M-NT 1800 MU A is a phosphate-free reactive conversion coating formulated for use in the treatment of steel, zinc and aluminum surfaces. The BONDERITE® M-NT 1800 MU A process increases the corrosion resistance of painted metal surfaces and is free of regulated organic and inorganic components. The pretreatment solution is applied by immersion applications under ambient conditions.

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.

Operating data:

pH*	3.6 - 5.2
Free fluoride*, ppm	10-100
Component A	0.800 – 1.300 Absorbance @ 436 nm
Component B	0.150 – 0.450 Absorbance @ 610 nm
Time, seconds	60 to 180
Temperature, °F (°C)	55 to 115 (13-45)

* The pH and Free fluoride ranges are overall ranges for the product. The ranges may be targeted and be narrower as required by individual plants.

Bath make-up per 100 gallons:

BONDERITE® M-NT 1800 MU A	25.2 lb (3.0 gallons)
BONDERITE® M-AD 426 (optional)	0.45 lb (0.05 gallons)
BONDERITE® M-AD 700	2.44 lb (0.27 gallons)

Process description:

The complete process normally consists of the following steps:

1. Cleaning
2. City water rinsing
3. Deionized or low conductivity water rinsing
4. Conversion coating
5. DI/RO water rinsing
6. Drying (optional)

Equipment:

All equipment for use with the process bath should be constructed of 304 or 316 stainless steel. If mild steel is used in construction, it must be appropriately lined. Please contact for more information.

Process piping and pumps should be constructed of 316 or 304 stainless steel alloys. Various formulations of plastic pipe may be used with recommended support spacing, Schedule-80 being generally recommended. CPVC and PP may be used up to a maximum process temperature of 150°F. PVDF may be used for all expected operating temperatures. All process circulation pump seals, valve seats, door seals, etc., which come into contact with the process solution and occasional acid equipment cleaners, can be Buna-N, EPDM, FKM or PTFE. Note that while CSPE is compatible with the process solution, it is not compatible with acid equipment cleaners that may be used.

Chemical feed pump parts and other elastomers that may come into contact with the concentrated replenishing chemical can be Buna-N, EPDM, CSPE, FKM or PTFE.

Support equipment available from Henkel Adhesives Technologies for this process includes: chemical feed pumps, level controls, transfer pumps and bulk storage tanks.

Our sales representative should be consulted for information on Henkel Adhesives Technologies automatic process control equipment for this process and any additional questions.

Surface preparation:

Cleaning:

All metal to be treated with the conversion coating solution must be free from grease, oil and other foreign matter before the treatment. A complete line of cleaners is available and our representative will recommend the proper one for each installation.

Before make-up of the BONDERITE® M-NT 1800 MU A bath, the pretreatment tank must be cleaned thoroughly. After the tank is cleaned, fill it to about 3/4 full with deionized water and start circulation for about 15 minutes.

Bath make-up:Immersion application:

1. Fill the tank about 3/4 full with deionized water.
2. Add 25.2 pounds (3 gallons) of BONDERITE® M-NT 1800 MU A for each 100 gallons.
3. Add 0.45 lb (0.05 gallons) of BONDERITE® M-AD 426 (optional) for each 100 gallons.
4. Add sufficient amount of deionized water to the process tank to bring the solution up to the working level.
5. Mix thoroughly.
6. Determine the pH and adjust it before beginning operation.
7. Increase pH by addition of 2.44 pounds (0.27gallons) of BONDERITE® M-AD 700 for each 100 gallons, in small increments.
8. Always add BONDERITE® M-AD 700 in a turbulent area of the tank so the BONDERITE® M-AD 700 can be diluted with bath solution very quickly to prevent active components in the BONDERITE® M-NT 1800 MU A tank from precipitating.

Replenish BONDERITE® M-NT 1800 MU A bath with BONDERITE® M-NT 1800 R product series, or alternatively with BONDERITE® M-NT 1800 and BONDERITE® M-AD 426 (optional). Consult your Henkel Technical Service Representative to determine appropriate replenishing products. Replenishing is best accomplished by adding the chemicals continuously with a metering pump into a turbulent area of the tank.

Bath control:pH Determination:

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

pH Range: 3.6 to 5.2.

To increase pH by 0.1 (for a bath that is above pH = 3.5): Add 0.6 fl. oz (17.5 ml) of BONDERITE® M-AD 700 per 100 gallons.

To reduce pH by 0.1: Add 1 fl.oz (29 ml) of BONDERITE® M-AD 120 per 100 gallons.

Frequent testing of pH, and small additions of BONDERITE® M-AD 120 or BONDERITE® M-AD 700 are preferred. Always avoid large additions of either pH adjustment chemical.

Component A:

- Photometer: WTW pHotoFlex
- Cuvette/vessel: Diameter 28 mm
- Method-No.: 908

Preparation of the WTW pHotoFlex:

1. Turning-on of the device.
2. Select "Photometry" and confirm with "ENTER".
3. Select program 908 (Press button "PROG" and determine the measurement method with the numeric input, then confirm with "ENTER").
4. For the zero compensation fill the 28 mm cuvette with deionized water and follow the instructions on the photometer's display.
5. Execute the measurement.

Bath make-up:

1. Pipette 50 ml of Reagent 908-1 into a 100 ml beaker.
2. Add 200 µL of the bath sample to the beaker (use an accurate pipette) and mix the solution gently.
3. Add 2.0 ml of Reagent 908-2 and mix the solution gently.
4. Decant the mixture into a cuvette and start the measurement (remark: the volume is not specified, just make sure that enough solution to decanted to cover the light beam of the photometer).
5. Record the result.

Component B:

- Photometer: WTW pHotoFlex
- Cuvette/vessel: Diameter 28 mm
- Method-No.: 912

Preparation of the WTW pHotoFlex:

1. Turning-on of the device.
2. Select "Photometry" and confirm with "ENTER".
3. Select program 912 (Press button "PROG" and determine the measurement method with the numeric input, then confirm with "ENTER").
4. For the zero compensation fill the 28 mm cuvette with deionized water and follow the instructions on the photometer's display.
5. Execute the measurement.

Bath make-up:

1. Pipette 1.0 ml of the bath sample into the cuvette/vessel.
2. Add 9.0 ml deionized water.
3. Add one tip of a spatula Reagent 912-1 and mix the solution gently.
4. Add one tip of a spatula Reagent 912-2 and mix the solution gently to the complete dissolving of the reagents.
5. Wait 3 min.
6. Add 0.5 ml of Reagent 912-3 and mix the solution gently; then start the measurement.
7. Record the result.

Free fluoride:

The free fluoride is controlled by measuring its concentration in ppm using a Fluoride Ion Selective Electrode (ISE) along with a compatible ISE meter (e.g. Orion 4 Star pH/ISE meter).

Prior to taking the measurements, the electrode and meter must be calibrated according to the manufacturer's specifications using 3 NaF (Sodium Fluoride) standards: 10 ppm F⁻, 100 ppm F⁻ and 1000 F⁻ ppm. NaF (Sodium Fluoride) standards are available from VWR. In a plastic beaker obtain a sample of BONDERITE® M-NT 1800 MU A bath (100 ml will be sufficient). Place the ISE directly into the bath sample. Allow enough time for the reading to stabilize, and then take the reading from the instrument. This reading is the free fluoride value in ppm.

Free Fluoride Range in ppm: 10 to 100 ppm.

To decrease value by 10 ppm add 1.61 fluid ounces (47.6 ml) of BONDERITE® M-AD 101 per 100 gallons of working bath.



After treatment:Deionized or Reverse Osmosis Water Rinsing:

A deionized or reverse osmosis (RO) water rinse is preferred in order to obtain optimum results from the treatment. A deionized or RO water rinse will most effectively remove any water-soluble salts from the treated surface. The design of the equipment is important for efficient use of deionized or RO water. Consult your Henkel representative.

Drying:

Drying is not necessary if the parts will be immediately painted with a water based electro-coat primer. Treated parts can be oven-dried at temperatures up to 350°F for 10-20 minutes. Consult your Henkel representative.

Waste disposal information:

Disposal information for the chemical, in the form as supplied, is given on the Material Safety Data Sheet. The processing bath is slightly acidic. Neutralization by the addition of caustic soda to the rinse water or processing solution may be required prior to discharge. Please consult with Henkel Sales and Tech. Service Representatives on this topic. The processing bath and sludge that accumulates in the bath can contain ingredients other than those present in the chemical as supplied and analysis of the solution and/or sludge may be required prior to disposal.

Precautions:

When handling the chemical products used in this process, the first aid and handling recommendations on the **Material Safety Data Sheet** for each product should be read, understood and followed.

Classification:

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

Hazardous Information
Transport Regulations
Safety Regulations

Storage:

Recommended storage temperature, °F 40 to 110

BONDERITE® M-NT 1800 MU A and BONDERITE® M-NT 1800 R may precipitate if stored at temperatures below 40 or above 110°F. If the products are frozen or have a precipitate on the bottom of the container, then do not use the material.

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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