

BONDERITE M-FE 3821 ST

Known as Duridine 3821 ST
October 2016

PRODUCT DESCRIPTION

BONDERITE M-FE 3821 ST provides the following product characteristics:

Technology	Cleaner - coater
Product Type	Acid 1-2-components
Application	Metal Parts

BONDERITE M-FE 3821 ST is a liquid product based on acidic phosphates formulated to treat steel, galvanized steel and aluminum alloys.

When used in combination with surfactant additive provides cleaning and phosphating in the same stage.

When used after cleaning step, it can be used as conversion coating step.

BONDERITE M-FE 3821 ST forms on the treated surface an amorphous phosphate coating based on surfactants, which provides good adhesion for solvent, powder or electrophoretic paints.

We suggest a subsequent partial continuous renewal rinse and possibly a final rinse with demineralized water.

A suitable final passivation stage gives further improvements on corrosion resistance performances.

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.

Application:

BONDERITE M-FE 3821 ST is used by spray in pre-painting treatments of steel materials in automotive, appliances, metal furniture and plate manufactured goods in general scarcely exposed to aggressive agents (humidity, atmospheric agents, etc.).

In case on cycles without preliminary degreasing stage it is necessary to employ the product in combination with an appropriate detergent additive.

HENKEL Technical Service can suggest the most suitable additive depending on the required operative conditions (treatment temperature, specific contamination, spray or immersion application).

Additions of appropriate additive enable using the product in a wide range of applications due to the possibility to modify the operative parameters both for technical decision or in case of problems in the treatment managing (i.e. not operational bath heating system).

Operation:

BONDERITE M-FE 3821 ST is used according to the specific application, in double or multi stage, at following working conditions:

Spray

Concentration	10 to 20 g/L (kg/1,000 L)
Additive concentration	0.5 to 5 g/L (kg/1,000 L)
Total acidity	7 to 14 points
pH	4 to 5.5
Temperature	30 to 70°C
Time	2 to 3 min
Pressure	1 to 2 atm

Immersion

Concentration	30 to 50 g/L (kg/1,000 L)
Additive concentration	1 to 5 g/L (kg/1,000 L)
Total acidity	21 to 35 points
pH	4 to 5
Temperature	50 to 70°C
Time	3 to 6 min
Pressure	---

Bath make-up:

1. Fill the tank with clean tap water up to 3/4 of the volume.
2. Start the recirculating pumps and heat up to working temperature.
3. Add the required quantities of BONDERITE M-FE 3821 ST and of appropriate detergent additive (when necessary) according to the type of application.
4. Add 1.4 kg of Caustic Soda pearls for each 100 kg of BONDERITE M-FE 3821 ST.
5. Bring the bath to correct volume and to working temperature; let it recycle for 15 to 20 min.
6. Make the controls.

Bath Control:

Total Acid

- Transfer a 20 mL sample into a 250 mL beaker.
- Add about 10 mL of distilled water and 3 to 5 drops of Phenolphthalein Indicator.
- Titrate with 0.1 N Sodium Hydroxide (NaOH) until the solution turns from colorless to a permanent pink color.
- The mL of 0.1 N NaOH used for the titration is the Total Acid value.
- A standard BONDERITE M-FE 3821 ST bath made up at 10 g/L concentration should have a T.A. value of about 7.

pH Determination

- Transfer 100 mL bath into a beaker and cool it down to room temperature (about 20°C).
- Measure the pH value with a pH-meter previously calibrated on values of 4 and 7 (it is advisable using a pH-meter with Fluoride resistant electrode).

Bath Replenishment:

The bath should be periodically controlled and kept at the initially fixed concentration by additions of BONDERITE M-FE 3821 ST according to the total acid obtained in the analysis.

To increase the concentration add 1.5 kg of BONDERITE M-FE 3821 ST for each missing point and for each 1,000 L of bath.

Our Technical Service will suggest the appropriate replenishing amount of detergent additive according to the operative parameters.

As the bath ages, pH or Total Acid value may increase.

In this case replenish the bath to maintain the pH value within the correct operational range until complete renewal of the bath solution.

Caution:

BONDERITE M-FE 3821 ST is an acid product! Follow the safety regulations. Shield eyes with tightly fitting safety glasses, wear protection gloves and acid-resistant safety clothes! Avoid contact with skin! Do not inhale vapours!

Storage

Recommended Storage Temperature, °C	4 to 35
Shelf-life, months (in unopened original packaging)	36

Classification

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

Hazards identification
Transport information
Regulatory information

ADDITIONAL INFORMATION**Disclaimer****Note:**

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.

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