

# **BONDERITE M-AC AL2000**

September 2023

#### PRODUCT DESCRIPTION

BONDERITE M-AC AL2000 provides the following product characteristics:

Technology	Metal Pretreatment
Product Type	Conditioner for Zincphosphating
Application	Immersion or spray process
Process components:	
BONDERITE M-AC AL2000	Make-up + Replenishing
BONDERITE C-AK 11566-1	Make-up + Replenishing
BONDERITE M-AD 100	pH regulator
BONDERITE M-AD 565	pH regulator

BONDERITE M-AC AL2000 is a liquid activating product added to the rinsing bath prior to a dip or spray zinc phosphate treatment.

## Application Areas:

BONDERITE M-AC AL2000 is effective in producing uniform and fine crystalline phosphate coatings on iron, steel, aluminum and zinc surfaces.

BONDERITE M-AC AL2000 is suitable for the use in hard water.

# **TECHNICAL DATA**

Appearance	milky white
Density	~1.15 g/cm³
pH-value (1% DI water 20°C)	~7 to 8

### **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 1,000 L:

While stirring or with the circulation pump running, the following amount is added to the bath tank filled with water:

# Make-up in DI water:

BONDERITE M-AD 565	0.0 to 0.1kg = 0.0 to 0.1L
	(addition till pH 8.0 to 11.0

**BONDERITE M-AC AL2000** 0.3 to 5 kg = 0.3 to 4.5 L

### Make-up in hard water:

**BONDERITE M-AD 100** 1.0 kg = 0.6 L

**BONDERITE M-AD 565** 4.0 to 8.0 kg = 3.5 to 7.0 L

(addition till pH 7.0 to 8.0)

**BONDERITE C-AK 11566-1** 0.3 kg = 0.2 L

**BONDERITE M-AC AL2000** 0.3 to 5.0 kg = 0.3 to 4.5 L

# **Operating Data:**

pH-value 7.5 to 11.0 Zinc pointage 1.0 to 15 Temperature 20 to 40 °C max. Duration of treatment 15 to 120 sec

Operation of BONDERITE M-AC AL2000 outside of this temperature range or operation in hard water without BONDERITE C-AK 11566-1 is not recommended without approval of the local Henkel Technical Customer Service representative.

When the BONDERITE M-AC AL2000 bath is no longer effective it should be discarded and a new bath should be made up.

## **Bath Monitoring:**

BONDERITE M-AC AL2000 solution is controlled by determination of the zinc pointage.

Specified range of zinc pointage: 1.0 to 15

# Titration of Zinc Pointage:

- Pipette 20 mL of homogenized bath solution into an Erlenmeyer flask and dilute with 100 ml of distilled
- Add with a pipette 20 mL of buffer solution (pH 10, Ammonia containing) and 30 mL of 0.01 M Titriplex III solution (EDTA).
- Add little Eriochrome black T
- Titrate with gentle shaking with 0.01 M MgSO4 soluti on until the color changes from blue to purple (violet). Continue with the same solution:

- Add 10 drops of dimercaptopropanole solution. The solution turns blue.
- Titrate again with 0.01 M MgSO4 solution until the color changes from blue to purple (violet).
- The consumption of MgSO4 solution in mL is the zinc pointage.



#### Replenishment:

To increase the zinc pointage, add per missing point and per 1,000L bath:

BONDERITE M-AC AL2000 0.4 kg = 0.35 L

For operation of BONDERITE M-AC AL2000 in hard water additionally add per 1 point zinc pointage increase and per 1000 L bath volume:

BONDERITE C-AK 11566-1 0.16 kg = 0.1 L

(zinc pointage <5)

or 0.08 kg = 0.05 L(zinc pointage >5)

Remark: The pH may be raised by making small additions of BONDERITE M-AD 565. The pH may be reduced by making small additions of BONDERITE M-AD 100.

# Materials for analysis:

Required equipment and reagents:

Special indicator paper, pH 6.5 to 10 (Merck, Art. 9543) or pH-meter.

Zinc pointage:

Beaker 250 mL (2)

Pipette 20 mL (2)

Erlenmeyer-flask 300 mL (2)

Burette 25 mL

Dropping bottle 25 mL (2)

Spatula

0.01 M solution of Titriplex III (EDTA)

0.01 M solution of MgSO4

Buffer solution pH 10 for complexometric analysis Eriochrome black T (mixture with sodium chloride 1:99)

20 % alcoholic 2,3-dimercaptopropanole solution (store below 5°C)

Two pieces of the glass equipment is recommended because of the risk of crack.

## Source of supply:

The a.m. equipment and reagents are available from the general chemical trade or from lab supply stores.

#### Classification:

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

Hazards identification Transport information Regulatory information

#### Storage:

Recommended Storage Temperature 5 to 30°C Shelf-life 12 months

## 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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