

# BONDERITE M-CR 1500 AERO

Known as Alodine 1500  
May 2019

## PRODUCT DESCRIPTION

BONDERITE M-CR 1500 AERO provides the following product characteristics:

<b>Technology</b>	Metal Pre-Treatment
<b>Product Type</b>	Conversion Coating
<b>Application</b>	Immersion and Spray

BONDERITE M-CR 1500 AERO is a liquid chemical used to produce a protective, colourless coating on aluminium.

The process is operated at room temperature.

The coating produced minimizes corrosion and provides an improved bond for paint.

BONDERITE M-CR 1500 AERO and other BONDERITE coating chemicals are listed in the Qualified Product List Mil-DTL-81706 as approved materials for other Methods and Classes of Military Specification Mil-DTL-5541.

## DIRECTION OF 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 water with stirring/circulating pump:

BONDERITE M-CR 1500 AERO                      10.5 kg or 10 L

In case of very hard water DI-water should be used for the make-up.

### Operating Parameters:

Temperature, °C                                      20 to 70  
Time, min    1 to 5

### Process Steps:

1. Clean/ Pickle
2. Rinse
3. Chromate with BONDERITE M-CR 1500 AERO
4. Rinse
5. Dry

### Clean/Pickle:

Products of the BONDERITE type are used for cleaning/pickling.  
Check back with their data sheets.

### Rinse:

The clean surfaces are thoroughly rinsed with cold tap water.

### Chromating:

Apply a BONDERITE M-CR 1500 AERO coating in an immersion or spray process.

### Rinse:

The clean surfaces are thoroughly rinsed with cold tap water.

### Remarks:

Containers for BONDERITE M-CR 1500 AERO should be made out of acid-proof plastic or austenitic steel (type 1.4571). Baths of BONDERITE M-CR 1500 AERO as well as its rinsing baths must not be discharged into the public sewage system without prior detoxification and neutralization.

### Particular Cautions:

BONDERITE M-CR 1500 AERO contains chromium trioxide and complex fluoro compounds.

### Wear:

- Eye goggles
- Rubber gloves
- Acid resistant wear
- Avoid contact with skin
- Provide air circulation

## Transparent chromating for aluminium and its alloys

### Fields of application:

BONDERITE M-CR 1500 AERO is a liquid chemical used to produce a protective coating on aluminium or aluminium alloys. The coating provides protection for aluminium and is an excellent bond for clear organic coatings. BONDERITE M-CR 1500 AERO should be used when the characteristic aluminium appearance must be retained.

BONDERITE M-CR 1500 AERO is listed on the register for MIL-DTL-81706 and is approved to be used by Methods A and C (spray and immersion processing) to produce class 3 coatings in accordance with Military Specification MIL-DTL-5541 (current issue).

This TDS is valid for spray and immersion application.

**Bath Make-up:**

For each 1,000 L volume of bath add to the water with stirring or circulating by the pump:

BONDERITE M-CR 1500 AERO                      10.5 kg or 10 L

In case of very hard water DI-water should be used for the make-up.

**Operating Parameters:**

Cr(VI)-points	6.7 to 7.7
pH-value	<4.0
Temperature, °C	20 to 70
Time (immersion), min	2
Time (spray), sec	15 to 30
Pressure, bar	0.5 to 1.0

**Process Steps:**

1. Clean/ Pickle
2. Rinse
3. Deoxidize
4. Rinse
5. Chromate with BONDERITE M-CR 1500 AERO
6. Rinse
7. Rinse with DI-water
8. Dry

**Bath Maintenance:**

The BONDERITE M-CR 1500 AERO coating chemical bath is controlled by a titration of the Cr(VI)-points and a pH check in the plant.

**Cr(VI)-points:**Titration

1. Pipette 50 mL sample of the BONDERITE M-CR 1500 AERO coating chemical bath into a flask and dilute with 50 mL distilled water.
2. Dissolve 1 to 2 g amidosulphonic acid.
3. Add 20 mL of 25 % H<sub>2</sub>SO<sub>4</sub> and 2 to 3 g KJ.
4. Titrate against 0.1 N sodium thiosulphate solution until the colour changes from brown to yellow.
5. Add several mL of the starch solution to the sample and continue the titration until the blue-black colour disappears.
6. Record the number of mL of 0.1 N sodium thiosulphate solution used as Cr(VI)-points.

Replenishment

Add 1.5 kg or 1.4 L BONDERITE M-CR 1500 AERO per 1,000 L of the bath for each Cr(VI)-point lacking.

The bath should be kept within 6.7 to 7.7 Cr(VI)-points.

**pH-Determination:**

A pH determination should be made each time the BONDERITE M-CR 1500 AERO coating chemical bath has been replenished. The optimum pH is max. 4.0 or less. If the pH is above 4.0 the bath has to be dumped.

**Remarks:**

The tank material containing BONDERITE M-CR 1500 AERO should be made out of rigid PVC (free from plasticisers) or austenitic steel (type 1.4571).  
Hooks and basket will have to be made out aluminium, rigid PVC (free from plasticisers) or austenitic steel.  
Spraying systems, pumps and heat exchangers have to be made out of stainless steel (type 1.4571).  
Bathes of BONDERITE M-CR 1500 AERO as well as its rinsing bathes are not to be discharged into the public sewage system without prior detoxification and neutralization.

**Particular Cautions:**

BONDERITE M-CR 1500 AERO contains chromium trioxide and complex fluoro compounds.

**Wear:**

- Eye goggles
- Rubber gloves
- Acid resistant wear
- Avoid contact with skin
- Provide air circulation

**Storage:**

Recommended Storage Temperature, °C	0 to 40
Shelf-life, months	24
(in unopened original packaging)	

**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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Reference 0.1