

BONDERITE M-ED 11100

Known as Almecco Seal F1
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PRODUCT DESCRIPTION

BONDERITE M-ED 11100 provides the following product characteristics:

Technology	Metal Treatment
Product Type	Cold Impregnation
Application	Aluminium Surfaces

BONDERITE M-ED 11100 is a powder product formulated for cold impregnation of anodised aluminium surfaces.

Cold fixation is obtained by absorption of specific chemical substances into the pores of aluminium oxide.

By a subsequent chemical reaction the porosity is chemically closed, therefore increasing the hardness of the oxide film.

The chemical reaction starts in the sealing bath and gradually continues for 24 hours.

In the first 2 hours after treatment the oxide is not completely fixed thus aluminium is sensible to pollution of chemical substances like acids, caustic agents, oil, greases and other contaminants that could create permanent defects on the layer.

After cold sealing with BONDERITE M-ED 11100 and 24 hours ageing, the treated aluminium meets all test and requirements of the following international regulations:

ISO 2932 - weight loss in acetic acid and sodium acetate solution

ISO 2931 - measurement of admittance and impedance

ISO 3210 - weight loss in phosphate-chromic solution (previously dipped in Nitric Acid)

ISO 2143 - "dye spot test" (Scott Test)

Furthermore aluminium samples that have been anodised to 20 µm and sealed with BONDERITE M-ED 11100 meet the accelerated corrosion tests specifications:

ISO 9227 - Salt-spray test (1500 hours of exposure)

ISO 9227 - Salt-acetic spray test (600 h)

ISO 9227 - Kesternich (5 cycles)

ISO 3770 - C.A.S.S. test at 35 °C (150 h)

Anodized samples coloured by electro-colouring or absorption have been tested with a decolouring resistance test ISO 2135.

The obtained results were equal or superior than those obtained with samples sealed with traditional products and at the same operating conditions.

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-ED 11100 is used in aqueous solution at the following working conditions:

Concentration	4 to 6 g/L
pH range	5.8 to 6.8
Temperature	23 to 28°C
Time	0.7 to 1.2 min/µm

HENKEL Technical Service will suggest the best suitable operational limits.

Bath Make-up:

- Fill the tank with (possibly) deionised water and add 4 to 6 kg of BONDERITE M-ED 11100 for each 1,000 L of bath.
- Heat up to operating temperature under recirculation.
- After homogenisation, make the required controls.

Bath Control:

Control the bath by means of titre determination, product concentration and pH determination.

Titre determination:

- Transfer 25 mL of working bath into a 250 mL flask.
- Add 50 mL of DI water, 20 mL of Ammonia (NH₄OH) 1:1 solution and 0.1 to 0.3 g of Murexide indicator.
- Titrate with 0.1 M EDTA solution until the colour turns from brown to strong violet.
- The mL of 0.1 M EDTA solution used for the titration is the Titre value.
- A standard bath made up at 6 g/L has a Titre value of 8.6.

Concentration BONDERITE M-ED 11100 (g/L) = Titre value x 0.7



pH Determination

- Transfer 100 mL bath into a beaker and cool it down to room temperature (about 20°C).
- Calibrate a pH-meter following the instruction of the device with buffer solutions at 4 and 7.
- Measure the pH value of the bath dipping the electrode in the sample solution.
- Read the value after stabilization (it is advisable using a pH-meter with Fluoride resistant electrode).

Storage:

Recommended storage temperature, °C	0 to 50
Shelf-life, months (in unopened original packaging)	36

Replenishment:

Keep the bath concentration as consistent as possible by additions of BONDERITE M-ED 11100. For each missing point (titration value) add 0.7 kg of BONDERITE M-ED 11100 for each 1,000 L of bath. The average consumption of BONDERITE M-ED 11100 in industrial plants can be generally envisaged in the range 3 to 3.5 g/m² of treated Aluminium.

For maintaining satisfying levels of the bath performances, it is advisable to use an additive as:

Acetic acid and ammonia solution to adjust pH value.

BONDERITE M-ED 5440: additive to remove the slight green colour that may be generated on aluminium surfaces; add in a ratio of 1 to 5% of BONDERITE M-ED 11100 concentration.

BONDERITE M-AD 30110 to increase free fluoride concentration.

Particular Cautions:

- Tanks and all other parts of the plant in contact with the product must be made of stainless steel AISI 316 L or other appropriate anti-acid material (avoid using fiber glass reinforced plastic).
- For rinses use tap or well water providing that the hardness value is under 30°F. In case of hard water reduce the hardness value or employ demineralized water. It's strongly recommended that all rinse baths are provided with a good renewal in order to maintain the bath clean and with a neutral pH (6 to 7.5).
- Be sure the pieces are completely dry before manual handling (removal from the treatment brackets storage and packaging). In any case handle the pieces carefully during the first two hours after sealing).
- An ageing bath in warm water (50 to 70°C) for 10 to 15 minutes enables the immediate safe handling of the pieces.
- Slight differences in the product appearance do not affect its performance.

Classification:

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

Hazards identification
Transport information
Regulatory information



ADDITIONAL INFORMATION**Disclaimer**

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Reference 0.2