BONDERITE

Technical Data Sheet

BONDERITE M-ED 11150

April 2020

PRODUCT DESCRIPTION

BONDERITE M-ED 11150 provides the following product characteristics:

Technology	Metal Treatment
Product Type	Nickel free
Application	Cold Sealing Operations
Temperature	1 step 35 to 40°C 2 step >65°C

BONDERITE M-ED 11150 and BONDERITE M-ED 11151 are a Ni-free technology for the sealing of anodized aluminum.
They are not suitable for dye coloring.

BONDERITE M-ED 11150-11151 is used to avoid glaze generation on the surface and to guarantee an excellent homogeneous surface finishing and perfect sealing performances.
This Technology consists of three liquid products:

BONDERITE M-ED 11150 used for make up
BONDERITE M-ED 11151 used for make up and replenishment
BONDERITE M-ED 11152 used for replenishment
BONDERITE M-ED 11160 used for appearance in Electrocolouring

Products are design to maintain the pH value at about 8.5 during the bath ageing.
Although it is advisable to make controls of the pH value after making up phase and during the process.

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 11150 and BONDERITE M-ED 11151 are diluted in deionized (DI) water at the following working conditions:

BONDERITE M-ED 11150	8 to 12 g/l
BONDERITE M-ED 11151	8 to 12 g/l
BONDERITE M-ED 11160	8 g/l
pH-value	8.3 to 8.8
Temperature	35 to 40°C
Treatment time	1.0 to 1.5 min/µm

The best application process of BONDERITE M-ED 11150 and BONDERITE M-ED 11151 consists of the following phases:

- Rinse with Deionized water.
- BONDERITE M-ED 11150 , BONDERITE M-ED 11151 and BONDERITE M-ED 11160 bath.
- Rinse with tap water and Deionized water.
- Ageing with DI Water with pH6.5 at 65°C from 1 to 1.5 min/m.

Our Technical Service will suggest the best working parameters and operating sequence according to the plant.

Best performance and a longer life of BONDERITE M-ED 11150/11151 bath can be achieved keeping bath under recirculation and continuous filtration at a grade of 25 microns.
During material treatment, keep the recirculation pumps off.

Bath Make-up:

- Fill the tank with deionized water up to ¾ of the final level and start the heating system.
- Under pump recirculation add the required amount of BONDERITE M-ED 11150 , BONDERITE M-ED 11151 and of BONDERITE M-ED 11160.
- Adjust the bath volume and heat up to operating temperature.
- Mix to homogeneity and make the controls.

Bath Monitoring:

BONDERITE M-ED 11150 concentration:

- The measurement is achieved through a bi-phase titration.
- Transfer 50 ml of bath into a 250 ml graduated cylinder equipped with lid and cool it down to 20°C.
- Add 20 ml of Acid Indicator and 30 ml of Chloroform then close the lid and actively shake.
- The sample should result divided in two phases, the lower with a pink colour.
- Add slowly 0.5 ml of 0.004 M Hyamine solution; shake the cylinder for 10 seconds and let it rest for abt 10 seconds; if the colour does not turn from the pink to blue, go on titrating by adding again 0.5 ml of 0.004 M Hyamine solution.
- Reduce the Hyamine addiction when the turning point is getting closer.

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- Repeat until the colour turns from pink to light blue.
- The titration is completed when the colour of the sample remains light blue for at least 3 minutes.

The ml of 0,004 M Hyamine solution used for the titration represent the bath value.
Calculate the product concentration as follows:
BONDERITE M-ED 11150 (g/l) = bath value x 3,2

BONDERITE M-ED 11151 Concentration:

BONDERITE M-ED 11151 concentration can be measure by Fluoride determination.
Perform the measurement using a device with Ion sensitive probe and appropriate tool for reading of the concentration. Before running the measure calibrate the instrument referring to the specific calibration instruction of the device. Keep the solutions under agitation when measuring.

Calibrate with Fluoride standard solutions diluted in a buffer solution of TISAB III. For a two point calibration use the following solution:

- 1 ml of 100 mg/L Fluoride standard solution diluted in 25 ml of TISAB III buffer
- 1 ml of 1000 mg/L Fluoride standard solution diluted in 25 ml of TISAB III buffer

After a successful calibration, measure the fluoride concentration of the bath. Dilute also the bath sample with a TISAB III buffer solution:

- 1 ml of BONDERITE M-ED 11150-11151 bath diluted in 25 ml of Tisab III buffer

BONDERITE M-ED 11151 concentration is calculated with the following formula:

Calculation: The product concentration is calculated with following formula:
BONDERITE M-ED 11151 (g/l) = Fluoride (mg/l) x 0.0125

BONDERITE M-ED 11160 Concentration:
The product BONDERITE M-ED 11160 can be controlled with a photometric method in our laboratory or with a portable equipment. The method will be supplied from our technicians.

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).

Replenishment:

The operating bath concentration is maintained constant through replenishment with BONDERITE M-ED 11151 and BONDERITE M-ED 11152 . According to the method described above add:

- 0.5 kg of BONDERITE M-ED 11152 for each 1,000 L of bath to increase the concentration of BONDERITE M-ED 11150 by 1 g/l.
- 1 kg of BONDERITE M-ED 11151 for each 1,000 L to increase the concentration of BONDERITE M-ED 11151 by 1 g/l.

pH value is adjusted by small additions of:

- POTASSIUM HYDROXIDE in case that the pH is too low
- ACETIC ACID in case that the pH is too high.

Particular Cautions:
BONDERITE M-ED 11150-11151 are compatible with plant equipment normally employed.
Small differences in products appearance do not affect its performances.

Classification:
Please refer to the corresponding **Safety Data Sheets** for details on:
Hazards identification
Transport information
Regulatory information

Storage:

Recommended Storage Temperature	5 to 50°C
Shelf-life, months	24

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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Reference 1.0

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