BONDERITE

Technical Data Sheet

# BONDERITE C-IC DEOXDZR 6 MU

Known as Deoxidizer 6/16
April 2019

## PRODUCT DESCRIPTION

BONDERITE C-IC DEOXDZR 6 MU provides the following product characteristics:

| | |
|---|---|
| **Technology** | Metal Pre-Treatment |
| **Product Type** | Aluminium Etching |
| **Application** | Immersion |
| **Process Components:** | |
| BONDERITE C-IC DEOXDZR 6 MU | Make-up |
| BONDERITE C-AD DEOXDZR 16R | Replenisher |
| BONDERITE C-AD ETCH ADD20 AERO | Additive |

BONDERITE C-IC DEOXDZR 6 MU is a system of liquid additives to be added to mineral acids used for deoxidising/desmutting of Aluminium as pre-treatment prior to chromating or anodic colouring.

BONDERITE C-IC DEOXDZR 6 MU added to Nitric Acid bath is specifically studied as pretreatment to anodic colouring, and mainly when the rinse step are not very effective.

BONDERITE C-IC DEOXDZR 6 MU added to Sulphuric Acid bath is specifically studied for aluminium etching before thermic welding, due to the lowering of the surface electrical resistance.

When the etched aluminium contains high amounts of Copper we suggest adding our BONDERITE C-AD ETCH ADD20 AERO to avoid its accumulation.

An addition of abt 0.15% BONDERITE C-AD ETCH ADD20 AERO to the etching bath can precipitate 70 ppm Copper ( BONDERITE C-AD ETCH ADD20 AERO is a good substitute for DE TONER 7/17 used in BAC 5765).

## 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.

**Operating Parameters:**
BONDERITE C-IC DEOXDZR 6 MU is used by immersion process according the following working parameters:

| | **Nitric Acid 42 Bè** | **Sulphuric Acid 66 Bè** |
|---|---|---|
| Concentration Acid | 10% v/v | 5% v/v |
| BONDERITE C-IC DEOXDZR 6 MU | 5% v/v | 5% v/v |
| RT (Reaction Titration) | 30 mL max. (70 mL max if BONDERITE C-AD ETCH ADD20 AERO is used) | |
| Temperature | 20 to 30°C | 20 to 30°C |
| Time | 1 to 10min | 1 to 10min |

**Bath Make-up:**

- Fill the tank up to abt 2/3 of the operating volume.
- Under pump recirculating add slowly the fixed amount of Nitric or Sulphuric Acid.
- Under pump circulation add the required amount of BONDERITE C-IC DEOXDZR 6 MU.
- Heat up to the working temperature (if necessary).
- Fill up the tank to the operating level.
- Recirculate for 10 to 20 min to homogeneity.
- Make the final controls.

**Bath Control:**
**Acid Value**

- Transfer 2 mL of working bath into a 250 mL flask or beaker.
- Add about 100 mL of DI water and 7 to 8 drops of Bromocresol Green solution 0.5% in water.
- Titrate slowly with 1 N Sodium Hydroxide (1N NaOH) until the colour turn from yellow to green.

The number of mL of 1 N Sodium Hydroxide used for the titration is the Acid value.

A standard bath with 10% v/v Nitric acid solution has an Acid value = 3.

A standard bath with 5% v/v Sulphuric Acid solution has an Acid value = 3.5.

**BONDERITE C-IC DEOXDZR 6 MU/ BONDERITE C-AD DEOXDZR 16 R Pointage**

- Transfer 5 mL bath into a iodometric flask and add 100 mL water.
- Add abt 1 g of Potassium Iodide (KI) crystals and mix to dissolution and close the flask.
- Add two fractions of 5 mL each Hydrochloric Acid 1:1, rinse the neck of the flask and close it again.
- After 1 min titrate with 0.1 N Sodium Thiosulphate solution until pale yellow colour appear.

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- Add some mL of satured Starch solution and keep on titrating to the black colour turn to white.
- The mL of 0.1 N Sodium Thiosulphate solution used, is the BONDERITE C-IC DEOXDZR 6 MU/BONDERITE C-AD DEOXDZR 16 R pointage.

**RT (Reaction Titration) value**

- Transfer 5 mL bath into a iodometric flask and add 100 mL water.
- Add 2 to 4 mL of 50 % Sodium Hydroxide solution.
- Add 7 to 8 mL of 30 % Hydrogen Peroxide solution.
- Add some anti-bumping balls and boil the solution for 20 minutes. The solution shall be yellow. If the colour is green, add some more Hydrogen Peroxide and boil again for 20 minutes.
- Cool to room temperature.
- Add three fractions of 5 mL each Hydrochloric Acid 1:1, rinse the neck of the flask and close it again.
- Add abt 1gr of Potassium Iodide (KI) crystals and mix to dissolution and close the flask.
- After 1 min titrate with 0.1 N Sodium Thiosulphate solution until pale yellow colour appear.
- Add some mL of satured Starch solution and keep on titrating to the black colour turn to white.

The difference between the mL of 0.1N Sodium Thiosulphate solution used for this titration and the BONDERITE C-IC DEOXDZR 6 MU/BONDERITE C-AD DEOXDZR 16 R pointage is RT value.

RT value must be <30 mL.
When BONDERITE C-AD ETCH ADD20 AERO is used, RT value must be <70 mL.

**Replenishment:**
Replenishment is usually made using BONDERITE C-AD DEOXDZR 16 R .

Add abt 380 g BONDERITE C-AD DEOXDZR 16 R to 100 L bath to increase 1 missing point.

If after ageing the bath become too etching, we suggest to replenish with BONDERITE C-IC DEOXDZR 6 MU by adding 380g/ 100L for each missing point.

**Advices:**
The bath surface has to be kept free from oil or organic pollutants, through periodical skimming.
Keep the plant area adequately ventilated.
The longer the treatment time and the heavier is the etching.
For the etching before welding we suggest a treatment time ranging from 3 to 5 min.
The tanks, pumps, pipes and all the plant parts should be made of stainless steel (ie AISI 316).

**Post Treatment:**
After treatment the pieces should be carefully rinsed with warm/cold water depending on the further processes.
For further welding the pieces should be carefully dried and carefully handled to avoid staining.
For further chromating step drying is not required.

**Storage:**

| Process Component | Recommended Storage Temperature, °C | Shelf life, months (in unopened original packaging) |
|---|---|---|
| BONDERITE C-IC DEOXDZR 6MU | -20/ +50 | 36 |
| BONDERITE C-AD DEOXDZR 16 R | -15/ +40 | 36 |
| BONDERITE C-AD ETCH ADD20 AERO | -4/ +40 | 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. 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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