

## BONDERITE C-IC AS

Known as NOVOX AS

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### PRODUCT DESCRIPTION

BONDERITE C-IC AS provides the following product characteristics:

<b>Technology</b>	Industrial Cleaner
<b>Product Type</b>	Acid Cleaner / Pickle
<b>Application</b>	Descaling

BONDERITE C-IC AS is a liquid, acid product, specially developed for descaling surface treatment lines.

BONDERITE C-IC AS is applied by dipping or spraying on all types of equipment (washing/rinsing, phosphating, chromating tanks or tunnels, heat exchangers, cooling circuits, etc.) and enables the removal of mineral deposits (scale due to lime salts in water, phosphate deposits, etc.).

By using BONDERITE C-IC AS it is possible to eliminate the very serious consequences of scale build-up, such as:

- Reduction of the thermal performance and significant increase of the energy cost.
- Risk of pump blocking and partial blockage of the spraying circuit which have a negative effect on the consistency and quality of the treatment.

BONDERITE C-IC AS is perfectly inhibited to ensure a safe use on all ferrous metals.

### TECHNICAL DATA

Appearance	homogenous liquid
Color	colorless to clear yellow
Density	1.16
pH-value (in a solution of 10 g/L)	~1

Easily miscible with water.  
Product is a strong acid.  
Contains a corrosion inhibitor for steel.

### 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 C-IC AS is intended for circulation through lines and equipment, but can also be applied by dipping.

#### Operating Parameters:

For application by spraying, the recommended operating parameters are as follows:

Concentration	50 to 150 mL/L
Temperature	20 to 50 °C
Treatment time	30 min to a few hours depending on the degree of scaling.
Pressure	1 to 2 bar

It is preferable to avoid overheating the solution, as heating accelerates the descaling operation, what also generates aggressive acid vapors. Those vapors can be removed with an appropriate ventilation system.

Note: The operating conditions can be modified according to the nature of the scale and the amount to be removed; they are determined by our technical service engineers after analyzing the specifics of the application. In particular, for descaling operations by dipping and for equipment showing major build-ups of scale, the concentration may be increased to as much as 200 mL/L.

#### Process Description:

To achieve effective results and complete removal of scale, it is essential to comply with the operating cycle.

#### 1) Preparations

Drain off spent baths.

Rinse tanks and interior tunnel walls using pressurized water (if possible with a firefighting jet), in order to remove non-adhering sludges to the maximum extent possible.

#### 2) Inspection

Before taking any further action, inspect the installation to assess the nature and amount of scale to be removed from each of the stages.

This will determine the concentration of BONDERITE C-IC AS to be used and the treatment time.

#### 3) Preliminary treatment

If any greasy soiling is observed on the walls (in particular in degreasing stations), it is recommended to perform a preliminary alkaline cleaning step using a caustic detergent with good complexing properties, such as BONDERITE C-IC AS, under the following conditions:

Concentration	30 to 60 g/L
Temperature	20 to 60 °C
Contact time	30 min to 3 hours
Pressure	1 to 2 bar

This step is followed by a rinse using clean water.

#### 4) Descaling

Fill the tanks with water up to a level slightly above the

suction intakes for the spraying pumps.

Switch on the pumps and monitor the circulation of the clean water. If any problems arise, take the necessary action to remove any obstructions that may be blocking spray bars or nozzles.

Note: If nozzles show severe limescale build-up, these can be descaled separately in a small tank using a 10% solution of BONDERITE C-IC AS, stirring from time to time. Heat the solution to the service temperature and add BONDERITE C-IC AS.

Allow to circulate for several hours, monitoring the product concentration and the appearance of the equipment at regular intervals

When no change in concentration can be detected any more, drain off the solution and rinse out the system several times (or fill the tanks to overflowing) until a pH of between 6 to 8 is reached in the last rinse water.

Then empty out the tanks completely.

If necessary, treat each stage with a dilute solution of the product (in order to restore the original chemical conditions).

Drain all the tanks again, emptying them completely before preparing new baths.

#### **Bath Control:**

##### **A) Dosing method**

###### Procedure

- Take a sample of the bath and cool it down to room temperature.
- With a pipette, take 10 mL of the solution and pour it in an Erlenmeyer.
- Add approx. 50 mL distilled water and 3 to 5 drops of phenolphthalein indicator.
- Titrate with a solution of caustic soda N until the indicator changes from colorless to pink.
- Note V mL added.

###### Formulas

Total acidity (in number of points) = V

Concentration of BONDERITE C-IC AS (mL/L) = V x 9.6

Concentration of BONDERITE C-IC AS (in g/L) = V x 11.1

##### **B) Adjustment of the bath**

In order to increase the acidity with 1 point, add 9.6 mL/L ( 11.1 g/L) of BONDERITE C-IC AS.

#### **Caution:**

BONDERITE C-IC AS contains hydrochloric acid. The precautions to be taken are equal to the measures to be taken when using acid products.

Wearing boots, gloves, safety glasses and protective clothes is recommended.

In contact with the skin, the product may cause serious burns.

In case of contact with eyes or skin, immediately rinse and wash with plenty of water and contact a doctor specialist.

Provide showers and eye wash fountain near the working place.

#### **Effluent Information:**

For the rejection of the used solutions, please proceed as follows:

- Neutralization by using lime to precipitate the salts and adjust the pH between 6.5 to 9.
- Decantation of the sludge.

Verify the conformity of the effluent with the legislation.

#### **Storage**

BONDERITE C-IC AS must be stored in original closed packaging.

Keep away from alkaline products.

#### **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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