

## BONDERITE C-IC 3502

Known as P3 Chemacid 3502

April 2017

### PRODUCT DESCRIPTION

BONDERITE C-IC 3502 provides the following product characteristics:

<b>Technology</b>	Industrial Cleaner
<b>Product Type</b>	Acid Cleaner
<b>Application</b>	Parts Cleaning, Derusting
<b>Concentration</b>	100 to 250 g/L
<b>Operating Temperature</b>	40 to 80 °C immersion process

BONDERITE C-IC 3502 is a sulphuric acid based cleaner for pickling and derusting of iron and steel. It is composed of sulphuric acid, nonionic surfactants and inhibitors.

#### Application Areas:

BONDERITE C-IC 3502 is used in industrial immersion processes.

It is particularly suitable for pickling / derusting in state-of-the-art metal pre-treatment processes.

### TECHNICAL DATA

Appearance	clear, brownish liquid
Density at 20°C, g/cm <sup>3</sup> : (DIN 51757)	~1.54
pH-value (1% in DI water 20°C)	~1.3

### 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.

#### Bath make-up:

Add the required amount carefully whilst circulating to cold water.

Concentration	100 to 250 g/L (13 to 33 points)
---------------	-------------------------------------

#### Operating Data:

Temperature	40 to 80°C
Duration of treatment	1 to 10 min
Iron (II)	max. 80 to 90 g/l

#### Bath Control:

BONDERITE C-IC 3502 solution is controlled by the following analysis:

#### Titration of free acid:

Feed, mL	5 mL
Titrant:	0.5 N sodium hydroxide
End point:	pH 4.0
Indicator:	bromphenolblue (0.1 % alcoholic solution)
Titration factor (TF):	7.5 g/l x ml

- Pipette 5 mL bath solution into a clean 300 mL Erlenmeyer-flask.
- Add 50 mL deionized water.
- Add 4 to 5 drops of indicator.
- Titrate the solution with 0.5 N sodium hydroxide.
- The endpoint will be shown by a colour change from yellow to blue (pH-value: 4.0).
- The added mL of 0.5 N sodium hydroxide is equal to the "Free acid" points.
- Multiply the consumption of the alkaline solution with the titration factor TF, to get the concentration in g/L.
- Divide this by 10 to get the value in %.

#### Example:

$$10\text{mL } 0.5 \text{ N sodium hydroxide} \times 7.5 \\ = 75\text{g/L BONDERITE C-IC 3502} (= 7.5 \%)$$

#### Titration of the iron(II) content:

Before titration the presence of iron(II) in the bath solution has to be checked. A dipped in test strip must turn red

Feed, mL	5 mL
Titrant:	0.1 N potassium permanganate
End point:	pink colour, 15 sec
Indicator:	not needed
Titration factor (TF):	1.12 g/l x ml

- Pipette 5 mL bath solution into a clean 300 mL Erlenmeyer-flask.
- Add 10 mL 25% sulfuric acid.
- Immediately afterwards add slowly 0.1 N potassium permanganate with a burette, while swirling or stirring the sample.
- The endpoint will be shown by a permanent pink colour (persists for at least 15 sec).
- The added mL of 0.1 N potassium permanganate multiplied by the factor TF 1.12 is equal to iron (II) in g/L.

Example:

10 mL 0.1 N potassium permanganate x 1.12  
= 11.2 g/L iron (II) (= 1.12 %)

If the iron(II)-content exceeds the given limit, then part or all of the BONDERITE C-IC 3502 bath must be replaced with fresh cleaner.

#### Storage:

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

#### 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.

##### In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

##### In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

##### In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

##### Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.3