

# BONDERITE C-IC SMUTGO NC AERO

Known as Turco Liquid Smut-Go NC  
August 2020

## PRODUCT DESCRIPTION

BONDERITE C-IC SMUTGO NC AERO provides the following product characteristics:

<b>Technology</b>	Metal Cleaning
<b>Product Type</b>	Acid cleaner
<b>Application</b>	Immersion process

BONDERITE C-IC SMUTGO NC AERO is a dark brown concentrated liquid, formulated to deoxidize and desmut aluminum alloys by immersion and spray methods.

BONDERITE C-IC SMUTGO NC AERO is free of all chromates and is ideal for processing alloys that require low surface resistance, prior to anodizing, conversion coating, bonding or welding.

Nominal etch rates for most aluminum alloys will normally be in the range of 0.5 - 2.5 µm/h/side.

If higher etch rates are required, BONDERITE C-IC SMUTGO NCB AERO may be used.

Please add also BONDERITE C-IC DEOXML 2310 AERO.

## Features

- Free of all chromates
- Can be used either in Immersion and spray systems
- Readily soluble in water
- Easy to control by titration
- Etch rate can be adjusted to meet specific requirements
- Effective at ambient temperatures

## TECHNICAL DATA

### (as supplied):

Appearance	brownish liquid
pH-value, as is	<1

## DIRECTION OF 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.

## Use instructions

### Equipment:

Tanks, headers, pumps and associated equipment may be fabricated from stainless steel or other acid-resistant material. Do not use glass or fiberglass.

### Spray & Immersion Systems:

Prepare a 18 to 20 % by volume solution of BONDERITE C-IC SMUTGO NC AERO in clean, cold water. For optimum results, the use of D.I. water is recommended, especially if low electrical surface resistance is required. Air agitation is recommended for immersion systems. Operate spray system approx. 1.5 to 2.0 bars.

### Temperatures:

Operate solutions within a temperature range of (50 to 100°F). Optimum temperature is about 25°C for both spray and immersion systems.

### Processing Time:

Processing time will vary with alloy, condition of bath and bath temperature. Normal processing time is from 1 to 10 minutes.

### Rinsing:

Rinse parts in cold, overflowing water or by spray methods. If low surface resistance is required, parts should be rinsed with D.I. water, preferably by spray or overflowing rinse of clean water followed by spray rinse of D.I. water. Rinse tanks should be changed daily for optimum results.

## Control Procedure for BONDERITE C-IC SMUTGO NC AERO :

### TITRATION METHOD #1:

## A. CONCENTRATION OF BONDERITE C-IC SMUTGO NC AERO :



**Apparatus:**

- 205942 - Pipet, 5 mL
- 205700 - Buret, 50 mL
- 205897 - Iodine Flask, 250 mL
- 205852 - Cylinder, 50 mL

**Reagents:**

- 25% Potassium Iodide solution
- 205104 - Titrating Solution 104 (0.1N Sodium Thiosulfate)
- Sulfuric acid, 25% by volume
- 205010 - Indicator 10 (Starch Indicator)

**Procedure**

1. Obtain a sample from the bath, increasing cool to room temperature. Pipet 5 mL into a 250 mL iodine flask containing 50 mL DI water.

2. Add 10 mL of 25% sulfuric acid.

3. Add 25 mL of 25% potassium iodide solution. Swirl to mix. Stopper and place a little potassium iodide solution in the flange of the iodine flask. Allow to stand in the dark for 5 minutes.

4. Titrate with TS 104. When the solution reaches a golden color, add 1-2 mL Indicator 10. Continue the titration to the endpoint, which is a clear colorless solution which remains colorless for one minute.

**Calculation:**

mL of TS 104 x 1.21 =

% by volume BONDERITE C-IC SMUTGO NC AERO

**TITRATION METHOD #2:**

BONDERITE C-IC SMUTGO NC AERO concentration can be determined through Fe<sup>3+</sup> concentration determined by ICP:

**Calculation**

[Fe<sup>3+</sup>] (g/L) x 1.02 =

% by volume BONDERITE C-IC SMUTGO NC AERO

- Demineralised water

**Procedure**

1. Take a sample from the production tank and let it cool down to room temperature.

2. Pipet 20 mL into a 250 mL beaker.

3. Add 50 mL DI water.

4. Add 1 to 2.5 g Sorbitol in the solution.

5. Titrate the sample with 1.0N sodium hydroxide to a pH of 2.5 using a pH meter.

**Calculation**

V(mL) 1,0 N sodium hydroxide x 0,187 =

% (v/v) Nitric Acid (69%)

Some specific operations may require additional Nitric Acid additions. In this case the recommendation is to maintain Nitric Acid content between 50 and 80 g/L.

**Storage:**

Temperature, °C

-10 to 60

Shelf-life (in unopened original packaging),  
months

24

**Classification:**

Please refer to the corresponding **Material Safety Data**

**Sheets** for details on:

**Hazards identification**

**Transport information**

**Regulatory information**

**B. CONCENTRATION OF NITRIC ACID:****Apparatus**

- Pipette 20 mL
- Plastic Beaker 250 mL
- Burette 50 mL
- Cylinder 50 mL
- pH meter

**Reagents**

- 1.0N sodium hydroxide
- Sorbitol (Fischer D-Sorbitol purified Catalog Number S-459 or equivalent)

## 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 0.1