BONDERITE

Technical Data Sheet

BONDERITE C-IC 7005

November 2020

PRODUCT DESCRIPTION

BONDERITE C-IC 7005 provides the following product characteristics:

Technology	Metal Pre-Treatment
Product Type	Acidic Cleaner
Application	Liquid Metal Cleaner / Rust Remover

BONDERITE C-IC 7005 is an acidic composition, which when diluted with water, produces a mixed mineral acid-solvent-detergent liquid metal cleaner and rust remover. It will effectively remove rust, scale and light deposits of mill oil from the surface of metals. BONDERITE C-IC 7005 will properly condition steel surfaces for painting or other subsequent operations.

Application Areas:
BONDERITE C-IC 7005 is used by immersion.

TECHNICAL DATA

Appearance	clear liquid
Density (16°C), g/cm³	1.475 to 1.495

DIRECTION OF USE

Preliminary Statement:
Prior to use it is necessary to read the **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.

Equipment:
The equipment for the BONDERITE C-IC 7005 acid cleaner and deruster must be constructed of acid resistant materials.

Immersion tanks should be mild steel, lined with lead, B.F. Goodrich Tri-Flex® 1000 rubber, CEILCOTE® FLAKELINE® 180, or other equivalent acid proof materials. An alternative to lined tanks is complete tanks fabricated using copolymer of polypropylene and polyethylene.

Piping should be Polypropylene(PP), Kynar® (PVDF), CHEM THREAD®, or other equivalent acid proof piping materials.

Heating of the process solution may be accomplished using steam heated Teflon® bundled coils.

Elastomer gasket and seal materials contacting this process solutions should be Teflon(TFE), CHEMRAZ® (FPM), NORDEL® (EPDM), or VITON®-A (FKM).

Bath agitation should be accomplished using a variable speed mixer with Kynar or Teflon coated wetted parts. If a circulation pump is used it should be a magnetic drive type with Kynar or Teflon coated wetted parts.

Bath Make-up:
The following operational parameters are suggested per 100 gallons of bath:

BONDERITE C-IC 7005	38 to 114 L
Acid Titration	16 to 48 mL
Iron Titration	max. 3 mL
Temperature	120 to 190°F
Immersion Time	1 to 3 min

Work coated with mill oil usually requires no precleaning. However, heavy deposits of grease or drawing compounds should be removed prior to BONDERITE C-IC 7005 treatment to prevent contamination of the cleaner bath. This can be done by wiping with acid cleaner, immersing the work in a suitable solvent, or using an alkaline cleaner followed by a water rinse.

Operating Procedure:
Fill the tank approximately 3/4 full with cold water. Add the proper amount of BONDERITE C-IC 7005 for each 100 gallons of working solution volume. Add water to the operating level and heat to the operating temperature.

Treatment Time, min	1 to 3
Treatment Temperature, °F	120 to 190

The initial charge is usually between 10 to 30 gallons per 100 gallons of operating bath. Our representative will assist in establishing the proper concentration based on the requirements and operating conditions.

The bath should be operated at the lowest temperature practicable for processing the work in the allotted time. The strength of the BONDERITE C-IC 7005 cleaner bath and the operating temperature affect the cleaning time. After the best values for time, temperature and concentration have been established, they should be maintained closely. Temperature should be held within ± 9°F.

It is important not to allow the BONDERITE C-IC 7005 solution to dry on the surface of the work. It is also important that the treatment with BONDERITE C-IC 7005 must be followed by alkaline cleaning and rinsing prior to coating with any Autophoretic chemicals.

Control:
Never pipet by mouth, use a pipet filler.

The control methods are described in the following paragraphs.

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Free Acidity

- Pipet a 10 mL sample of the BONDERITE C-IC 7005 bath into a 150 mL beaker.
- Dilute with water to approximately 100 mL and add 6 to 10 drops of methyl orange.
- Titrate slowly with NaOH 0.857N until the color changes from pink or orange to a yellow.
- The mL of NaOH 0.857N used is the Acid Titration value.

Acid Titration range: 16 to 48 mL depending upon buildup. For best results maintain the value within ± 2 points of that established for the operation.

To increase value 1 mL add: 0.6 gallons of BONDERITE C-IC 7005 per 100 gallons of bath volume.

Iron Titration

- Pipet a 1 mL sample of the BONDERITE C-IC 7005 acid cleaner bath in a beaker and dilute to about 25 mL with distilled water.
- Add 1 mL of Sulfuric Acid 50%.
- Fill the automatic buret to the zero mark with KMnO4 0.18N.
- While stirring the sample, slowly run in KMnO4 0.18N from the automatic buret until a pink color is obtained which lasts for at least 15 seconds.
- Record the number of mL of KMnO4 0.18N used as the Iron Titration.

Removal of Iron

The following factors determine the amount of iron that can be tolerated in the BONDERITE C-IC 7005 acid cleaner bath:

1. Strength of the bath.
2. Type of scale, rust, etc., to be removed.
3. Time available for BONDERITE C-IC 7005 treatment.
4. Type and cleanliness of rinsing available.

NOTE: When the iron level becomes excessive, treating time becomes longer and rinsing becomes difficult (because of the high concentrations of the brownish, gelatinous iron salts remaining on the work).

The Iron Titration operational level for each BONDERITE C-IC 7005 acid cleaner bath will be determined by your technical representative. The Iron Titration of a BONDERITE C-IC 7005 acid cleaner bath should not generally be allowed to exceed 3 mL (30 g/L).

Should the Iron Titration exceed the specified level, either (1) discard the bath and make up a fresh bath or (2) overflow a portion of the bath and then replenish with the proper amount of BONDERITE C-IC 7005 acid cleaner.

Waste Disposal Information:
Applicable regulations covering disposal and discharge of chemical should be consulted and followed.

Disposal information for the chemicals, in the form as supplied, is given on the Material Safety Data Sheet.

The cleaning bath contains inhibited phosphoric acid, solvent and surfactants. Neutralization and waste treatment may be required prior to discharge to the sewer.

Precautionary Information:
When handling the chemical products used in this process, the first aid and handling recommendations on the Material Safety Data Sheet should be read, understood, and followed.

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

Storage:

Storage temperature, °F	35 to 100
Shelf-life, months (in unopened original packaging)	12

BONDERITE C-IC 7005 acid cleaner will freeze at 0°F (-17.8 °C). If frozen, thaw in a warm place and stir thoroughly before using.

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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