

(Known as BONDERITE 1455 SF RTU)

Issued 11/11/2015

1. Introduction:

BONDERITE M-NT 1455 SF RTU (Known as BONDERITE 1455 SF RTU) is a dry-in-place treatment to be applied prior to painting on a sheet or stripline application to cold rolled steel, aluminum, zinc coated surfaces and stainless steel at a concentration that may be ready to use without further dilution. Application is generally by reverse roll coating.

The process produces a uniform coating which improves adhesion and durability of paint finishes.

The process does not include rinsing following the coating treatment which eliminates rinse water contamination and the need for treatment of the water.

2. Operating Summary:

Chemical:	Bath Preparation per 10 Gallons:
BONDERITE M-NT 1455 SF RTU	10 gallons
Operation and Control:	
Concentration at 100%	10.9 points (ml)
Temperature	Ambient

3. The Process:

The complete process for the treatment normally consists of the following steps:

- A. Cleaning
- B. Hot water rinsing
- C. Treating with the BONDERITE M-NT 1455 SF RTU processing solution
- D. Drying

4. Materials:

BONDERITE M-NT 1455 SF RTU BONDERITE CLEANER Testing Reagents and Apparatus

5. Equipment:





(Known as BONDERITE 1455 SF RTU)

The holding tank, pump, piping and solution trays should be constructed of 316 series stainless steel. The holding tank and piping may be constructed of, or lined with, plastic (our representative should be contacted).

The applicator rolls (reverse roll coating method) may be constructed of urethane, polyurethane or CSPE. The pickup rolls should be 316 series stainless steel quadragravure ($30 \times 30 \times 0.006$ " – 0.009") or rolls of equivalent pick-up characteristics.

Chemical feed pump parts and other elastomers which may come into contact with the concentrated chemical should be FKM or PTFE.

Support equipment available for this process includes chemical feed pumps, level controls, transfer pumps and mix tanks.

Our sales representative should be consulted for information on support equipment for this process. In addition, the "Henkel Surface Technologies Equipment Design Manual" may be consulted.

6. Treating with BONDERITE M-NT 1455 SF RTU processing solution:

Cleaning:

All metal to be treated with the processing solution must be free from grease, oil, rust, scale, or other foreign matter. A complete line of cleaners is available and the proper one will be recommended for each installation.

Water Rinsing:

After cleaning, the metal must be thoroughly rinsed with water. The rinse should be overflowed continuously at a rate which will keep it clean and free from scum and contamination.

BONDERITE M-NT 1455 SF RTU Build-up:

The BONDERITE M-NT 1455 SF RTU may be used without further dilution. However, dilution may be required based on differences in the method of application for your facility. Your Henkel representative can assist with establishing the best initial concentration and how best to maintain the optimal concentration.

Operation:

The coating solution is applied at room temperature (65° to 85° Fahrenheit), as a uniform film to the cleaned metal surface. The treated strip is passed through a dry-off oven.

It is essential that a uniform film of coating solution be applied to the strip. With roll coat application, it is necessary that the rolls be maintained to ensure a uniform film application.

The equipment used for application of the solution should be cleaned immediately after use. Water may be used for cleaning.

If the coating weight needs to be lowered (or raised) add water (or BONDERITE M-NT 1455 SF RTU) as appropriate. Once the coating weight is in the proper range, run the concentration titration below to determine the proper concentration. Subsequent solutions can then be prepared based on the concentration determined.

7. Testing and Control:

Never pipet by mouth. Use a pipet filler.





(Known as BONDERITE 1455 SF RTU)

Concentration:

The concentration of the treatment solution is determined by a simple titration. This titration should be run periodically to ensure a well operating system.

Solution A:

Pipet a 5.0 ml sample of the working bath into a 100-ml volumetric flask. Dilute this to the mark with deionized water.

Solution B:

Pipet (or discharge from a buret) exactly 25 ml of Titrating Solution 15 into a 150-ml beaker, add 50 ml of deionized water, then 5 ml of Reagent Solution 44.

Use Solution A to titrate Solution B. Add a volume of Solution A to Solution B to reach ~ 90% of the expected endpoint (see following table) and stir for 2 minutes. After stirring, continue dropwise addition of Solution A to Solution B until the pink-to-purple endpoint. The bath concentration may be back-calculated from the following table:

<u>gal per 10 gal</u>	Titration (ml)
10.0	
9.0	11.9
8.0	
7.0	14.9
6.0	17.1
5.0	
4.0	
3.5	
3.0	
2.5	

NOTE: The greater the concentration, the lower the number of points titration.

8. After Treatment:

Drying:

The treated strip must be dried as quickly as possible to ensure uniform deposition of coating. The strip must pass through a dry off unit adequate to remove the water. Air movement within the oven should be sufficient to remove evaporated water, but must not physically disturb the deposited wet film. The required dry-off temperature may vary depending on the specific application.

Once applied, the treatment solution film must not be disturbed before it has dried completely. Care must be taken to avoid physical contact with the strip before the film has dried.

The treated strip CANNOT be water quenched.

9. Storage Requirements:

BONDERITE M-NT 1455 SF RTU should be protected from freezing. If the chemical is frozen, it may be irreversibly damaged and should not be used. BONDERITE M-NT 1455 SF RTU may precipitate if stored at temperatures below 40° or above 100° Fahrenheit. The product must be stored between 40° and 100° Fahrenheit. If exposed to





(Known as BONDERITE 1455 SF RTU)

temperatures outside that range for short periods, the product should be immediately returned to the proper temperature and stirred.

10. Waste Disposal Information:

Applicable regulations covering disposal and discharge of chemicals should be consulted and followed.

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

The processing bath contains ingredients which should not be discharged directly into streams or lakes. The bath should be discharged to the facility waste treatment works or to a municipal waste treatment works.

The processing bath and sludge may contain ingredients other than those present in the product as supplied, and analysis of the solution and/or sludge may be required prior to disposal.

11. **Precautionary Information**:

When handling the chemicals used in this process, the first aid and handling recommendations on the Material Safety Data Sheet for each product should be read, understood, and followed.

The processing bath is acidic and may cause irritation of the skin and eyes. Do not get in eyes, on skin, or on clothing and do not take internally. In case of contact, follow the recommendations on the Material Safety Data Sheet for BONDERITE M-NT 1455 SF RTU.





(Known as BONDERITE 1455 SF RTU)

Testing Reagent and Apparatus (Order only those items which are not already on hand)

<u>Code</u>	Quantity Item
VWR# 89000-202	2* Beaker, 150-ml
592477	1 Buret Assembly, 25-ml Automatic
VWR # 89003-482	2* Pipet, 5-ml Volumetric
VWR # 89003-364	2* Pipet, 25-ml Volumetric
205947	1 Pipet Filler
VWR# 53600-108	1 Pitcher, Graduated, Plastic
593846	2.5 L Reagent Solution 44 (50% H2SO4)
592428	1.0 L Titrating Solution 15 (0.042N KmnO4)

*Includes one more than actually required, to allow for possible breakage.

Henkel Corporation | 32100 Stephenson Highway | Madison Heights, MI 48071 PHONE: (248) 583-9300 | FAX: (248) 583-2976 | www.henkelna.com/

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.

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.**

