

BONDERITE M-PT 99X

POST TREATMENT

(KNOWN AS PARCOLENE 99X)

Issued 1/28/2015

1. Introduction:

BONDERITE M-PT 99X (known as PARCOLENE 99X) post treatment is a patented, chromium and phosphate-free post treatment especially formulated for use over all types of conversion coatings used in the pretreatment of steel, zinc and aluminum surfaces. The post treatment is free of volatile organic components and increases the corrosion resistance of painted metal surfaces.

BONDERITE M-PT 99X is a reactive, organic polymer post treatment chemical, containing no heavy metals. Its corrosion resistance performance is equal to that of chromium containing post treatments. The treatment solution may be applied by a spray or immersion application under ambient conditions and is followed by a deionized water rinse. The BONDERITE M-PT 99X post treatment is compatible with a wide variety of paint systems, including cathodic electrocoat.

2. Operating Summary:

<u>Chemical</u>	<u>Bath Preparation per 100 Gallons:</u>
BONDERITE M-PT 6 (known as PARCOLENE 6)	0.05 to 0.1 fluid ounce
BONDERITE M-PT 99X (known as PARCOLENE 99X)	6.5 pounds (3/4 gallon)

<u>Operation and Control:</u>	
pH:	4.0 to 5.0
Concentration:	10.0 ± 3.0 points
Time:	20 to 120 seconds
Temperature:	Ambient

The BONDERITE M-PT 6 is added to the tank before the BONDERITE M-PT 99X to adjust bath pH if the makeup water is above the 5.0 to 6.5 pH range.

3. The Process:

The complete process for conversion coating a metal surface normally consists of the following steps:

- A. Cleaning
- B. Water rinsing
- C. Surface conditioning (optional)
- D. Conversion coating
- E. Water rinsing
- F. Post treatment with BONDERITE M-PT 99X
- G. Deionized water rinsing



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H. Drying (optional)

4. Materials:

BONDERITE M-PT 99X (known as PARCOLENE 99X)
BONDERITE M-AD 95B (known as PARCOLENE 95B)
BONDERITE M-PT 6 (known as PARCOLENE 6)
BONDERITE M-AD 700 (known as PARCO NEUTRALIZER 700)
Testing Reagents and Apparatus

5. Equipment:

All equipment for use with the process bath should be constructed of 304 or 316 stainless steel.

Process piping and pumps should be constructed of 316 or 304 stainless steel alloys. Various formulations of plastic pipe may be used with recommended support spacing, Schedule-80 being generally recommended. PVC Type I is limited to maximum process temperatures of 140° Fahrenheit. CPVC and PP may be used up to a maximum process temperature of 150° Fahrenheit. PVDF may be used for all expected operating temperatures and may reduce the rate of scale buildup in process piping. All process circulation pump seals, valve seats, door seals, etc., which come into contact with the process solution and occasional acid equipment cleaners, can be Buna-N, EPDM, FKM or PTFE. Note that while CSPE is compatible with the process solution, it is not compatible with acid equipment cleaners which may be used.

Chemical feed pump parts and other elastomers which may come into contact with the concentrated replenishing chemical can be Buna-N, EPDM, CSPE, FKM or PTFE.

Support equipment available from Henkel Technologies for this process includes: chemical feed pumps, level controls, transfer pumps and bulk storage tanks.

Your local sales representative should be consulted for information on Henkel Technologies automatic process control equipment for this process and any additional questions.

6. Surface Preparation:

The post treatment follows the water rinse after the conversion coating application. Effort should be given to providing an adequate rinse following the conversion coating step to avoid excessive contamination of the post treatment.

7. Post Treating with BONDERITE M-PT 99X:

Buildup:

Fill the tank about three-fourths full with water, preferably deionized water. The pH of the water must be between 5.0 and 6.0. Add small increments of BONDERITE M-PT 6, no more than 0.05 to 0.1 fl oz (about 2.5 ml) per 100 gal, to reduce the pH. After adjusting the pH, add 6.5 pounds (3/4 gallon) of BONDERITE M-PT 99X for each 100 gallons and then add sufficient water to bring the solution up to the working level. Mix thoroughly. Determine the pH and adjust if required before beginning operation.

NOTE: The addition of BONDERITE M-PT 6 should be made before the addition of BONDERITE M-PT 99X during buildup.



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Operation:

The conversion coating, wet from the water rinse, is treated with the post treatment. Either a spray or immersion application may be used.

Time: 20 to 120 seconds.

Temperature: Ambient.

If foaming occurs during operation, small increments of 1/10 fl oz (3 mls) of BONDERITE M-AD 95B per 100 gallons of bath should be added until the foam subsides. Excessive usage of BONDERITE M-AD 95B should be avoided.

8. Testing and Control:

pH Determination:

The pH is determined using a pH meter standardized at pH 4 and pH 7.

Recommended pH Range: 4.0 to 5.0.

To reduce pH by 0.1: Add 0.1 fl. oz (3.0 mls) of BONDERITE M-PT 6 per 100 gallons.

To increase pH by 0.1: Add 0.60 fl. oz (18.0 mls) of BONDERITE M-AD per 100 gallons.

Frequent testing of pH and small additions of BONDERITE M-PT 6 or BONDERITE M-AD 700 are preferred. Always avoid large additions of either pH adjustment chemical.

Concentration:

Pipet (or discharge from a buret) **exactly 5.0** ml of Titrating Solution 15 into a 150-ml beaker. Add 50 ml of water and then add 10 ml of Reagent Solution 44. With a 25-ml open top buret, determine the number of mls (points) of the operating bath required to discharge the pink color. Rate of addition should be 1-2 drops per second. The resulting solution should be orange yellow.

Concentration range: 10.0 ± 3.0 points (6.5 ± 1.5 lb per 100 gal).

NOTE: The greater the concentration, the lower the points (ml).

In recommended concentration range: To reduce titration by 1.0 point, add approximately 1.5 lb of BONDERITE M-PT 99X per 100 gal.

The concentration may be determined from the following table:

Concentration (lb per 100 gal)	Titration (points or ml)
4.3 (0.50 gal/100 gal).....	14.1
5.2 (0.60 gal/100 gal).....	12.2
6.5 (0.75 gal/100 gal).....	11.0
8.6 (1.00 gal/100 gal).....	7.8
10.3 (1.20 gal/100 gal).....	6.2

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9. After Treatment:Deionized Water Rinsing:

A deionized water rinse is preferred in order to obtain optimum results from the treatment. The deionized water rinse should remove all water soluble salts from the treated surface. The design of the equipment is important for efficient use of deionized water. Our representative should be consulted.

Drying:

In electro-painting processes, this step is optional. Painting of the wet parts will give satisfactory results. Our representative will advise if an air blow off or a drying oven should be used.

10. Storage Requirements:

BONDERITE M-PT 99X may precipitate if stored at temperature below 40° or above 110° Fahrenheit. The product must be stored between 40° and 110° Fahrenheit. If exposed to temperatures outside that range for short periods, the product should be immediately returned to the proper temperature and stirred.

11. Waste Disposal Information:

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

The processing bath is slightly acidic and contains sulfate. Neutralization and/or waste treatment of rinse water or processing solution may be required prior to discharge.

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

12. Precautionary Information:

When handling the chemical products 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 essentially non-irritating and non-toxic.

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

<u>Code</u>	<u>Quantity</u>	<u>Item</u>
89000-202**.. 2*		Beaker, 150-ml
592426	500 mL	Buffer Solution 7 (Na_2HPO_4 , KH_2PO_4 Solution)
592447	1.0 L	Buffer Solution 4 (0.05M potassium acid phthalate, thymol), pH = 4
592477	1	Buret Assembly, 25-ml
89003-506**.. 2*		Pipet, 10-ml Measuring
89003-482**.. 2*		Pipet, 5-ml Measuring
53497-009**.. 1		Pipet Filler
53600-108**.. 1		Pitcher, Graduated, Plastic
593846	2.5 L	Reagent Solution 44 (50% H_2SO_4)
592428	1.0 L	Titration Solution 15 (0.042N KMnO_4)
--	1	pH Meter

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

** VWR Part #: vwr.com or 800-932-5000