

BONDERITE C-AK ZX-1
ALKALINE CLEANER
(KNOWN AS PARCO CLEANER ZX-1)

Issued 6/3/2013

1. Introduction:

BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1) is designed to prepare aluminum, steel, electrogalvanized and hot dip galvanized surfaces to receive a conversion coating or prior to a plating operation.

Applied by spray or immersion this strongly alkaline treatment is particularly recommended for use ahead of BONDERITE™ processes.

2. Operating Summary:

Chemical	Bath Preparation per 100 Gallons:
BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1)	1.0 to 6.0 gallons

Operation:	Control:
Free Alkalinity:	Within ± 1 point of that gives the best results.
Alkali Ratio:	Within range that maintains cleaning efficiency.
Temperature:	
Steel and Galvanized	140° to 180° Fahrenheit
Aluminum Alloys	120° to 140° Fahrenheit
Processing Time:	
Spray:	1/2 to 3 minutes
Immersion:	1/2 to 6 minutes

3. Materials:

BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1)
Testing Reagents and Apparatus

4. Equipment:

The process tank, housing, pumps and piping for use with this solution may be constructed of mild steel. Maintenance will be simplified if nozzles are fabricated from 300 series stainless steel. The heat exchanger plates should be polished 316 stainless steel. If gas fired burner tubes are used, they should be made of schedule 80 mild steel pipe or equivalent. All process circulating pump seals, valve seats, door seals, and other elastomers which come in contact with the working process solution should be PTFE. FKM may be used but its life will be shorter. EPDM elastomers should be avoided.



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Automatic process control equipment, which promotes consistent quality and controlled costs, is available for automatically controlling this process. Auxiliary equipment, which is engineered and specified for this process, include air operated chemical transfer pumps, chemical metering pumps, reliable level controls, solenoid valve assemblies and bulk storage tanks. All chemical pump seals, valve seats and other elastomers which come in contact with the concentrated solution should be PTFE or CSPE.

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

5. Cleaning with BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1):

Buildup:

BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1) will clean effectively over a wide concentration range. Our representative will assist in establishing the most effective concentration for each application.

Fill the tank about three-fourths full with cold water. Add the recommended amount of BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1), then heat to the operating temperature. Buildup is usually in the range of 1 to 6 gallons per 100 gallons of working volume and is dependent upon the soil encountered, the metal being treated and the operating equipment and conditions.

6. Testing and Control:

Never pipet by mouth, use a pipet filler.

Free Alkali (for Aluminum):

Pipet a 10 ml sample into a 150-ml beaker. Add 5 drops of Indicator 3, then titrate with Titrating Solution 20 until 1 drop discharges the last of the pink. Record the ml used and substitute for "A" in the equation below. To the same sample, add 5 ml of Reagent Solution 37. With an aged bath, the red color will reappear. Re-zero the buret and again titrate with Titrating Solution 20 until one drop discharges the last of the pink. Record the ml used and substitute for "B" in the equation below.

$$\text{Free Alkali (points)} = \text{Titration "A"} - \frac{1}{3} \text{Titration "B"}$$

Free alkali range: within ± 1 point of the value which gives the best results.

To increase value 1 point: 0.2 gallon of BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1) per 100 gallons of solution volume.

The free alkali points may be increased or reduced, depending upon the type of soil, the time available, and the characteristics of the equipment in which it is used. Your representative will determine the optimum operating parameters of free alkalinity and "B" titration for your particular operation.



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BONDERITE C-AK ZX-1 gallons per 100 gallons	POINTS – Free Alkalinity
1.0	5.5
2.0	11.0
3.0	16.5
4.0	22.0
6.0	33.0
8.0	44.0

Free Alkali (for Steel and Galvanized):

Pipet a 10 ml sample into a 150-ml beaker. Add 5 drops of Indicator 3, then titrate with Titrating Solution 20 until one drop discharges the last of the pink. The ml of titrating solution 20 used is the free alkali value in points.

Free alkali range: within ± 1 point of the value which gives the best results.

To increase value 1 point: 0.2 gallon of BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1) per 100 gallons of solution volume.

The free alkali points may be increased or reduced, depending upon the type of soil, the time available, and the characteristics of the equipment in which it is used. Your representative will determine the optimum operating parameters of free alkalinity for your particular operation.

BONDERITE C-AK ZX-1 gallons per 100 gallons	POINTS – Free Alkalinity
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2.0	11.0
3.0	16.5
4.0	22.0
6.0	33.0
8.0	44.0

Total Alkali:

Pipet a 10 ml sample into a 150-ml beaker. Add 5 drops of Indicator 2, then titrate with Titrating Solution 20 from blue through green until one drop discharges the last of the green. The ml of Titrating Solution 20 used is the total alkali value in points. Record the total alkali value for use in determining the alkali ratio below.



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Total Alkali/Free Alkali Ratio:

As the cleaner is used and becomes contaminated, the total alkali will rise. Thus, the ratio of the total alkali to free alkali will also rise and this becomes a useful measure of the degree of contamination of the cleaner. The cleaner solution should be overflowed at a rate which will keep the alkali ratio below the level which will interfere with proper cleaning. Our representative will assist in establishing the operating limits.

7. Storage Requirements:

Extreme temperatures should be avoided when storing BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1). Indoor storage at or near ambient temperature is recommended.

8. Waste Disposal Information:

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

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

The cleaner solution is alkaline. Neutralization may be required prior to discharge to the sewer.

The cleaner solution and sludge 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.

9. Precautionary Information:

When handling the chemical in the form as supplied, the precautionary, first aid and handling recommendations on the Material Safety Data Sheet for the product should be read, understood and followed.

The cleaner solution is alkaline and can cause irritation of the skin and eyes and may burn eyes. Do not get in eyes, on skin or on clothing. In case of contact, follow the recommendations on the Material Safety Data Sheet for BONDERITE C-AK ZX-1 (known as PARCO CLEANER ZX-1).

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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>
592462	3*	Beaker, 150 ml
592477	1	Buret Assembly, 25-ml Automatic
592481	2*	Graduated Cylinder, 25-ml
592396	1	Indicator 2 (Bromcresol green) 250 ml
592398	1	Indicator 3 (Phenolphthalein) 250 ml
592475	2	Indicator Dropping Bottle
592492	2*	Pipet, 10-ml Volumetric
592494	1	Pipet Filler
592433	1	Reagent Solution 37 (25% Neutral KF) 4.0 Liters
592499	1	Pitcher, Graduated, Plastic
595584	1	Pocket Thermometer (0-220°F)
592430	1	Titration Solution 20 (0.1N H ₂ SO ₄) 4.0 Liters

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

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