BONDERITE C-AK 212
ALKALINE CLEANER
(Known As RIDOLINE 212)

Issued
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1. Introduction:

BONDERITE C-AK 212 (Known as RIDOLINE 212) is a concentrated, liquid, silicate-free, mildly alkaline cleaner designed to remove oils and light oxide films from aluminum and its alloys. It contains wetting agents that are easily rinsed from the metal surface and will not emulsify oils unless the oils themselves contain emulsifiers.

BONDERITE C-AK 212 (Known as RIDOLINE 212) is a low etching cleaner that will effectively remove polishing compounds without adversely affecting the appearance of the polished aluminum surface. Increases in temperature or reductions in concentration can produce a greater etching effect.

2. Operating Summary:

Chemical:	**Bath Preparation per 100 gallons**
BONDERITE C-AK 212 (Known as RIDOLINE 212)	4 to 15 gallons
Operation and Control	
Total Alkali	10.4 to 39.0 points (ml)
Free Alkali	3.6 to 13.5 points (ml)
Temperature	
Spray:	120° to 185° Fahrenheit
Immersion:	100° to 160° Fahrenheit
Time	
Spray:	1 to 5 minutes
Immersion:	3 to 15 minutes

3. Material:

BONDERITE C-AK 212 (Known as RIDOLINE 212)
Testing Reagents and Apparatus

4. Equipment:

The process tank, pumps and piping for use with this solution may be constructed of mild 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 and other elastomers which come in contact with the working process solution should be Buna-N, PTFE or FKM. EPDM elastomers should be avoided.

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. CHEMIXERS are available in three sizes for preparing solutions of powdered products which then may be metered into the process at a controlled rate. All chemical pump seals, valve seats and other elastomers which come in contact with the concentrated solution should be Buna-N, PTFE or FKM.

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

5. Cleaning with BONDERITE C-AK 212 (Known as RIDOLINE 212) CLEANER:

Buildup:

Fill the tank three-fourths full with water. Heat to 100° Fahrenheit. While recirculating or stirring, add 4 to 15 gallons of BONDERITE C-AK 212 (Known as RIDOLINE 212) for every 100 gallons of final solution volume. Mix until uniform. Add sufficient water to bring the solution up to the working level and then heat to the operating temperature. The low end of the concentration is generally used for pressure spraying applications. The upper end of the concentration range is used for immersion applications.

Operation:

Time
Spray: 1 to 5 minutes.
Immersion: 3 to 15 minutes.

Temperature
Spray: 120° to 185° Fahrenheit.
Immersion: 100° to 160° Fahrenheit.

6. Testing and Control:

Never pipet by mouth, use a pipet filler.

A BONDERITE C-AK 212 (Known as RIDOLINE 212) bath can be controlled by a Total Alkali (TA) or Free Alkali (FA) titration. In locations where soil loading is high, a Free Alkali (FA) titration may be better suited. Additionally, the TA/FA ratio can be useful for predicting bath life.

Total Alkali:

Pipet a 10 ml sample into a 250-ml Erlenmeyer flask. Add approximately 75 ml of deionized water and 4 to 6 drops of Indicator 4. Titrate with Titrating Solution 61 until the sample changes from yellow to orange. The ml of Titrating Solution 61 used is the total alkali value in points.

Total alkali range:	10.4 to 39.0 points (ml).
To increase value 1.0 point:	0.38 gallon (about 1.5 quarts) of BONDERITE C-AK 212 (Known as RIDOLINE 212) CLEANER per 100 gallons of solution volume.

Free Alkali:

Pipet a 10 ml sample into a 250-ml Erlenmeyer flask. Add approximately 75 ml of deionized water, and add 5 drops of Indicator 3. Titrate with Titrating Solution 61 until the sample changes from pink to clear.

Free alkali range: 3.6 to 13.5 points (ml).

To increase value 1.0 point: Add 1.3 gallons of BONDERITE C-AK 212 (Known as RIDOLINE 212) Cleaner per 100 gallons of solution volume.

Total Alkali/Free Alkali Ratio:

The TA/FA Ratio can be used to predict bath life. A new BONDERITE C-AK 212 (Known as RIDOLINE 212) bath has a TA/FA Ratio of approximately 3 to 1. Typically when the TA/FA Ratio doubles to 6 to 1, it is time to change the solution. This value is only a guide, and the actual control ratio should be determined for each process line.

7. Storage Requirements:

BONDERITE C-AK 212 (Known as RIDOLINE 212) is a liquid chemical which must be protected from freezing. Opened containers should be kept closed when not in use.

8. Waste Disposal Information:

Applicable regulations covering disposal and discharge of chemicals should be consulted and followed. Disposal information for BONDERITE C-AK 212 (Known as RIDOLINE 212) is given on the Material Safety Data Sheet.

9. 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.

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

Code	Quantity	Item
89000-202**	1	150 ml Beaker
17579-482**	1	Buret Assembly, 25-ml Automatic
89000-794**	2*	Flask, Erlenmeyer, Glass, 250-ml
592398	1 qt	Indicator 3 (Phenolphthalein)
592399	1 qt	Indicator 4 (Methyl orange)
41579LH***	1	Indicator Dropping Bottle
89003-350**	2*	Pipet, Volumetric, 10 ml
53497-009**	1	Pipet Filler
89095-602**	1	Pocket Thermometer (0-220°F)
592441	1 gal	Titrating Solution 61 (0.1N HCl)

*Includes one more than actually required, to allow for possible breakage.
**VWR Part # - 800-932-5000 or vwr.com
***Consolidated Plastics Part # - 800.362.1000 or consolidatedplastics.com