



Technical Process Bulletin

# BONDERITE C-AK 2860

## ALKALINE CLEANER

(KNOWN AS AQUENCE 2860 CLEANER)

Issued 5/30/2013

### 1. Introduction:

BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) is a liquid, non-silicated, strongly alkaline cleaner formulated for use in immersion process equipment for heavy duty cleaning and oxide removal from ferrous metal surfaces prior to autodeposition. BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) consists of a balanced blend of inorganic cleaning agents, organic sequestrants and surfactants which have been carefully formulated to provide rapid penetration and removal of the toughest soils.

### 2. Operating Summary:

Chemical:	Bath Preparation per 100 gallons:
BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER)	2 to 10 gallons

Operation and Control:	
Free Alkali	7.7 to 39.0 points
Total Alkali	<2.5 times free alkali
Temperature	150° to 200° Fahrenheit
Time	1 to 5 minutes
10 ml sample from 2% solution gives 7.7 points against 0.1N HCl.	

### 3. Materials:

BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER)  
RIDOSOL Detergent Cleaner Additive  
Testing Reagents and Apparatus

### 4. Equipment:

The process tank, housing, pumps and piping for use with this solution may be constructed of mild steel. All nozzles or eductors related to agitation of process bath should be of stainless steel construction. 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. Pump shaft and impeller should be of stainless steel construction. All pump seals, valve seats, 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.

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.



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### 5. Surface Preparation:

#### Precleaning:

It is sometimes desirable to incorporate a precleaning step. This preclean will prevent premature contamination by removing most of the gross soils from the metal surface.

#### Spray Cleaning:

Under most conditions it will be desirable to use this product or another AQUENCE spray cleaner in a spray cleaning stage prior to immersion cleaning with this cleaner/deruster. The spray cleaner will help prevent premature contamination and greatly extend the operation life of the BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) bath.

### 6. Cleaning with BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER):

#### Buildup:

The process tank is filled with water to a level where the circulating pump can be used. The cleaner is slowly added near an area of high agitation. Once charged, the tank should be circulated until thoroughly mixed.

<b>Operation:</b>	
Time:	1 to 5 minutes
Temperature:	150° to 200° Fahrenheit

Application: Immersion or spray (Immersion treatment, higher temperature and longer times will improve derusting performance.)

### 7. Testing and Control:

Never pipet by mouth, use a pipet filler.

#### Free Alkali:

Pipet a 10 ml sample into a 250-ml Erlenmeyer Flask containing 10 to 20 ml of deionized water. Add 4 to 6 drops of Indicator 3. Titrate with Titrating Solution 61 until one drop discharges the last of the pink color. The ml of Titrating Solution 61 used is the free alkali value in points.

Free alkali range: 7.7 to 39.0 points (ml)

To increase value 1 point: 0.26 gallon of BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) per 100 gallons of solution volume.

#### Total Alkali:

Pipet a 10 ml sample into a 150-ml beaker. Add 10 drops of Indicator 2. Titrate with Titrating Solution 61 from blue through green until one drop discharges the last of the green color. The ml of Titrating Solution 61 used is the total alkali value in points.

The total alkali is used to measure bath contamination. Should the ratio of the total alkali to the free alkali exceed 2.5, it is recommended that the process bath be discarded and recharged or the overflow rate increased.



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### 8. After Cleaning:

#### Water Rinsing:

After cleaning, the work is thoroughly rinsed in water. The rinse should be continuously overflowed and the overflow should be regulated with the rate of production so that the rinse water never becomes excessively contaminated.

### 9. Storage Requirements:

BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) freezes below 5° Fahrenheit (-15° Celsius). Freezing is not detrimental to the product. If the product does freeze, thaw in a warm place and stir prior to use. It is recommended that the product be stored indoors, in a cool, dry place.

### 10. General Maintenance:

During shut down periods, the bath should be overflowed to remove any soils that collect on top of the bath. Screens, nozzles, and risers should be checked regularly.

The build up of soils in the BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) tank may necessitate a bath discard and recharge. Discard frequency will depend upon production. Any scale build up in the tank should be removed by a suitable chemical or mechanical method.

### 11. Waste Disposal Information:

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

Disposal information for BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER) is given on the Material Safety Data Sheet.

The processing bath is alkaline and contains phosphate. Waste treatment and neutralization may be required prior to discharge to the sewer.

The processing bath 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.

### 12. Precautionary Information:

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

The processing bath is strongly alkaline and may cause irritation of the skin and can burn eyes. Do not get in eyes, on skin or on clothing. Do not take internally. Wear face shield, rubber gloves and protective clothing when handling. In case of contact, follow the recommendations on the Material Safety Data Sheet for BONDERITE C-AK 2860 (known as AQUENCE 2860 CLEANER).



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### Testing Reagent and Apparatus

(Order only those items which are not already on hand)

Code	Quantity	Item
594334	1	Thermometer, floating
592477	1	Buret Assembly - 25-ml Automatic
592488	2*	Erlenmeyer Flask, 250-ml
592396	1 qt	Indicator 2 (Bromcresol green)
592398	1 qt	Indicator 3 (Phenolphthalein)
592475	2	Indicator Dropping Bottle
592492	2*	Pipet - 10-ml Volumetric
592494	1	Pipet Filler
592499	1	Pitcher – Graduated Plastic
592441	1 gal	Titrating Solution 61 (0.1N HCl)

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

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

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