



BONDERITE C-IC 2520 ACID DEOXIDIZER (Known As DEOXIDINE 2520 (US))

Issued 8/11/2015

1. Introduction:

BONDERITE C-IC 2520 (known as DEOXIDINE 2520 (US)) is acidic and is specifically formulated for removal of scale from closed loop stainless steel heat transfer systems.

2. Operating Summary:

<u>Chemicals:</u>	<u>Bath Preparation for 100 gallons:</u>
BONDERITE C-IC 2520	Used as Received
<u>Operation and Control:</u>	
Total Acid received:	10 to 11 points (ml)
Temperature:	120 to 150°F (49 to 66°C)
Time	15 minutes to 2 hours

3. Materials:

BONDERITE C-IC 2520
Testing Reagents and Apparatus

4. Equipment:

The holding tank and all piping through which the solution will flow, should be made of type 316 or type 304 stainless steel. The holding tank should have a capacity of at least twice the volume of the heat exchanger and related piping.

5. Cleaning with the BONDERITE C-IC 2520 Solution:

Buildup:

BONDERITE C-IC 2520 is used as received.

Operation:

The cleaner solution is circulated through the heat transfer system at 120 to 150°F (49 to 66°C) until the system is cleaned. The solution should be recirculated until there is a negligible decrease in the concentration in a 15 minute time period. At that point the heat transfer system should be clean. The solution temperature should not exceed 150°F (66°C).

Cleaning Procedure (refer to Drawing 1, page 3):

Refer to the drawing on page 3. For normal operation of the BONDERITE spray system, valves 1 and 2 must be open; all others must be closed.



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Cleaning of the Heat Transfer System:

Turn off the steam supply valve to the heat transfer system. Turn off the BONDERITE spray pump and allow sufficient time for the solution to drain back into the BONDERITE tank. Close valves 1 and 2. Make certain the lids for the purge tank and removable pipes (if any) are in place. Open valves 3, 4, and 5. Open valve 6 and start the BONDERITE C-IC 2520 pump. When BONDERITE C-IC 2520 starts returning to the holding tank, slowly open the steam valve to the heat transfer system. Heat the BONDERITE C-IC 2520 until the solution in the holding tank reaches 120 to 150°F (49 to 66°C) and can be regulated by opening or closing the steam valve as required.

The solution should be recirculated until there is a negligible decrease in the concentration in a 15 minute time period. At that point the heat transfer surface should be clean.

When the heat transfer system appears to be clean (Sec 6), close the steam supply valve and turn off the cleaner pump. Open valve 7 to permit the cleaner in the heat transfer system to drain back into the holding tank.

Flushing the Holding Tank Pump and Piping:

Close valves 3, 4, 5, 6 and 7. Open valve 8 (fresh water supply). Open valve 6 and briefly flush the cleaner pickup pipe. Close valve 6.

Open valve 7 and briefly flush the pump and the cleaner drainline. Close valve 8. Open valve 6 and allow all solution to drain from the cleaner pump. Close valve 6 and 7.

Turn on the rinse pump (fresh water may be used), which feeds valve 9. Open valve 9. Open valves 3, 5 and 7 and briefly flush the heat transfer system, turning off valve 9 as soon as the heat transfer system has been flushed. Open valve 4, and permit the solution to drain from the heat transfer system and piping. Close valves 3, 4, 5 and 7.

Returning to Normal BONDERITE Operation:

Make certain that all valves in the cleaning system are closed. Open valves 1 and 2. Turn on the BONDERITE pump, and circulate the solution for at least 15 minutes.

6. Testing and Control:

Never pipet by mouth. Use a pipet filler.

Pipet a 1 ml sample into a 150-ml beaker. Add 10 ml of Reagent Solution 37 and 10 drops of Indicator 3. Then titrate with Titrating Solution 11 to the development of a permanent, faint pink. A fresh BONDERITE C-IC 2520 solution will require approximately 10.7 ml of Titrating Solution.

The solution should be tested at 15 minute intervals. When the concentration drops below 3 points the solution should be discarded and replaced with fresh BONDERITE C-IC 2520. The solution should be recirculated until there is a negligible decrease in the concentration in a 15 minute time period. At that point the heat transfer system should be clean.

Specific gravity of BONDERITE C-IC 2520 is 1.037 ± 0.005 (approximately 8.6 lbs/gal).

7. Storage Requirements:

No special storage requirements are needed for BONDERITE C-IC 2520. However, extreme temperatures should be avoided. Indoor storage at or near ambient temperature is recommended.



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8. Waste Disposal Information:

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

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

The processing bath is acidic. Neutralization of rinse water or processing solution may be required prior to discharge to the sewer.

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

9. Precautionary Information:

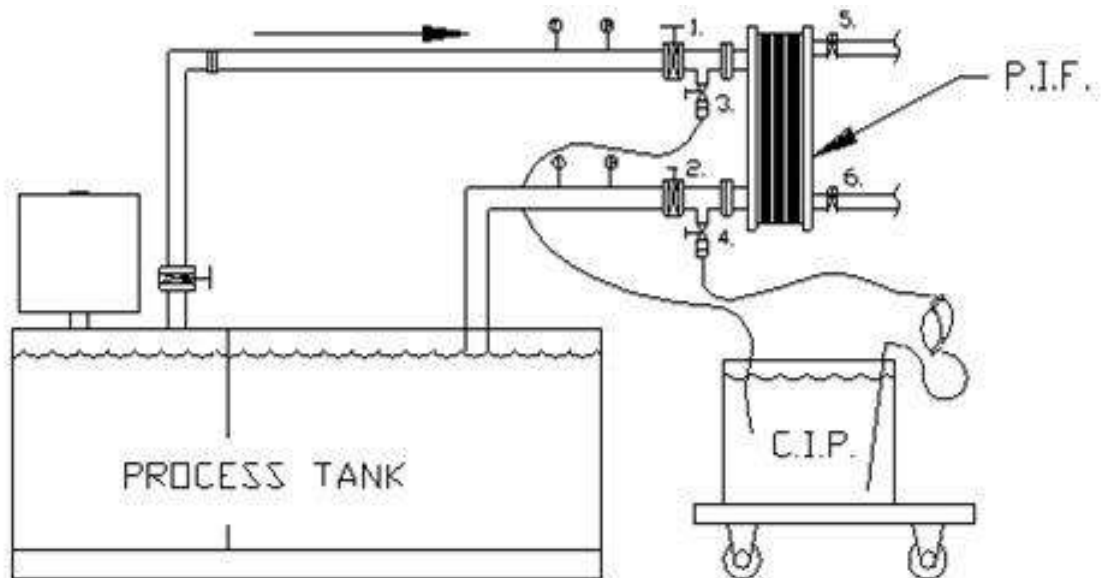
When handling the chemical products used in this process, the first aid and handling recommendations on the Material Safety Data Sheet for each product should be read, understood and followed.

The processing bath is acidic and may cause irritation of the skin and 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-IC 2520.



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1. CLOSE HEAT SUPPLY TO THE P.I.F., VALVES 5 & 6 & LET COOL TO 120 DEG. OR BELOW
2. CLOSE ISOLATION VALVE 1. LET P.I.F. DRAIN, THEN CLOSE ISOLATION VALVE 2.
3. CONNECT THE C.I.P., OPEN VALVES 3 & 4.
4. OPERATE THE AIR DR. PUMP TO CIRCULATE THE PARCO PURGE SOLUTION FROM THE RESERVOIR FOR 30 - 40 MIN. OR AS REQUIRED MAKING SURE THE SOLUTION TEMPERATURE DOES NOT EXCEED 120 DEG F.
5. ALLOW THE PARCO PURGE TO DRAIN TO THE C.I.P. TANK & CLOSE VALVES 3 & 4.
6. DISCONNECT THE C.I.P. HOSES.
7. FLUSH THE P.I.F. TO DRAIN WITH WATER.
8. CLOSE THE C.I.P. CONNECTION VALVES 3 & 4, OPEN THE ISOLATIONS VALVES 1 & 2, AND OPEN THE HEAT SUPPLY VALVES 5 & 6.
7. RESTART THE PROCESS SOLUTION CIRCULATION PUMP.



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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>
VWR# 89000-202	2*	Beaker, 150-ml
592398	1 qt	Indicator 3 (Phenolphthalein)
Consolidated Plastics # 41579LH/2oz Flip Top	1	Indicator Dropping Bottle
VWR# 89003-340	2*	Pipet, 1-ml Volumetric
VWR# 53497-009	1	Pipet Filler
VWR# 53600-108	1	Pitcher, Graduated Plastic
592433	1 qt	Reagent Solution 37 (25% neutral KF)
Thomas Scientific Part # 30250 Floating Dairy	1	Thermometer, Floating
592427	1 gal	Titrating Solution 11 (0.1N NaOH)

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

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