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## Summary Report of Testing Pinnacle products with Ecozyme Ultra detergent from SouthMedic

Date: May 17, 2023

Serim staff conducted testing of a sample of the Ecozyme Ultra detergent obtained from Southmedic at the 2023 HSPA meeting. Both PINNACLE products were tested using our standard testing protocol.

### PINNACLE Monitor for Manual Enzymatic Cleaning (PINNACLE MEC)

Serim tests a detergent with our PINNACLE MEC using the detergent manufacturer's recommended concentration at the upper and lower temperature limits listed in AAMI ST79 (27 and 44° C). When a concentration range is recommended, Serim tests both the upper and lower concentrations at temperatures listed above. Southmedic recommends using ¼ - 1 oz per gallon of detergent for manual cleaning. All four conditions listed below were tested using the procedure listed on the MEC bottle label (1 second dip, read at 90 seconds). PINNACLE MEC showed PASS results for all conditions at the 90 second read time and all tests matched the darker PASS block (see diagram below). Many tests matched the lighter PASS block at 60 seconds. Based on these results, Serim will add the Ecozyme Ultra detergent to our validated detergent list.

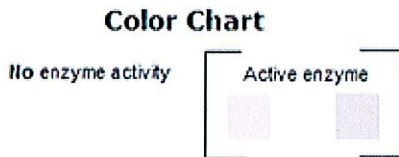
¼ oz/gallon at 27° C - All tests showed PASS

¼ oz/gallon at 44° C - All tests showed PASS

1 oz/gallon at 27° C - All tests showed PASS

1 oz/gallon at 44° C - All tests showed PASS

PINNACLE MEC color chart from bottle label



PINNACLE Monitor for Automated Enzymatic Cleaning (PINNACLE AEC)

## PINNACLE Monitor for Automated Enzymatic Cleaning (PINNACLE AEC)

Serim tests our PINNACLE AEC using the detergent manufacturer's recommended time, temperature and concentrations as listed on the bottle label. SouthMedic recommends using 1/8 – 1/2 oz/gallon at 40 – 65°C. Serim has a basic ultrasonic unit that allows us to control cycle times and temperature. Our testing process is to start with the manufacturer's lower recommendations for concentration, temperature and time because we have found through conversations with many customers that they commonly use shorter cycle times and lower detergent concentrations. We then conduct additional testing using higher detergent concentrations, cycle times and temperatures. The Ecozyme Ultra detergent consistently showed PASS results when using the highest recommended detergent concentration (1/2 oz/gallon). Testing lower detergent concentrations produced results close to PASS in many situations.

Our ultrasonic unit, while allowing us to easily adjust conditions, does not match the cleaning conditions in many of the newer, more sophisticated sonic units. Because of the limitations, we believe that more PASS results would be observed with the newer units due to greater overall enzymatic activity. In addition, PASS results would be observed in automated washer-disinfectors when they are working properly with this detergent.

As a result of our testing, Serim feels that our PINNACLE AEC test is appropriate for use with the Ecozyme Ultra detergent.

### Serim Product Labels

PINNACLE MEC – Product code 5179

**Serim**  
**PINNACLE**  
Monitor  
for  
**MANUAL**  
Enzymatic  
Cleaning Process

Verify active enzymes  
in manual baths

50 Test Strips

Product  
Code  
5179

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P.O. Box 402, Esham, NJ 08514-0002

**IMPORTANT:**  
Keep cap tight. Store at 15°–30°C (59°–86°F).  
Do not remove desiccant packet. Do not use  
test strips after expiration date. Keep pads  
away from liquids prior to use.

**DIRECTIONS:**

1. Fully immerse indicator pad into manual bath solution for one (1) second. Do not shake or blot.
2. Lay strip, pad side up, on a clean surface. Compare the indicator pad to color chart at 90 seconds.

**INTERPRETATION:**

NO enzyme activity

Active enzyme activity

Follow your organization's cleaning procedures.

MADE AND PRINTED IN THE USA. M-PAC1066 11/16 P&T/18



**Serim®**  
**PINNACLE™**  
Monitor  
for  
**AUTOMATED**  
Enzymatic  
Cleaning Process

Medical Washer Disinfectors  
and Ultrasonic Cleaners

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PO Box 4082, Ellettsville, IN 46114-1082

**Serim®**

Product  
Code  
5176

50 Test Strips

MADE AND PRINTED IN THE U.S.A.

**IMPORTANT:**  
Keep cap tight. Store at 15°–30°C (59°–86°F).  
Do not remove desiccant packet.  
Do not use test strips after expiration date  
printed on bottom of bottle.  
Keep pads away from liquids prior to use.

Use Pinnacle Test Strips to monitor  
washer disinfectors or ultrasonic  
cleaners using enzymatic detergents.

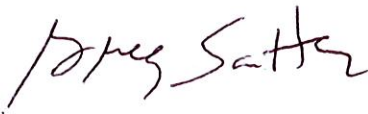
Do not use in cart washers or low  
temperature wash cycles such as those  
used for plastic ware.

**DIRECTIONS:**

1. Insert strip into holder and place  
securely onto rack or in basket.
2. Run wash cycle.
3. After the wash, remove the test strip  
and compare the color of the indicator  
pad to the internal color standard.
4. Refer to Instructions for Use (IFU) for  
interpretation of results.
5. Record results. A log sheet, additional  
IFUs and a reference guide can be  
downloaded from [www.serim.com](http://www.serim.com).

M77657652 11/00 R271

Written by



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