Technical Data Monograph

The Instrument Protection Properties of PRE-KLENZ™ Point of Use Processing Gel versus Other Pretreatment Products
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1 Introduction

Surgical instruments and equipment are a substantial investment for any hospital. This investment is continuous with the introduction of ever-changing, specialized and customized pieces. Reprocessing instruments in an efficient manner is crucial to maintaining optimum through-put within the Central Services department. However, processing can also be the source of hidden costs, as poor cleaning and lack of instrument protection may reduce the functionality of instruments and necessitate replacement prior to the end of their useful life.

Surgeries are becoming more complex, leading to extended periods of time before instrumentation enters the decontamination process. As such, pretreating instruments immediately following a procedure at point of use is a vital step in an effective cleaning process. Pretreatment products are designed to be in contact with the instrumentation for extended periods of time in order to prevent soils from drying onto instrument surfaces before the decontamination process begins. Due to these use patterns, pretreatment chemistries have the potential to significantly impact the quality of surgical instruments and equipment. The long exposure times make it particularly important that a pretreatment product be compatible with the metal and plastic materials used in the manufacture of surgical instruments and equipment exhibiting no negative impact on them.

Instrument corrosion reduces the efficiency of the instrument, causes excessive wear, and leads to expensive repair and replacement costs. Additionally, with hospitals faced with processing loaner sets of instruments on a regular basis, the need to minimize such instrument damage becomes even more critical. The use of a pretreatment product formulated to provide instrument protection greatly extends the useful life of surgical instruments by maintaining top functionality and performance. It allows for processing to occur in a highly efficient manner; reducing the need for additional reprocessing. Since corrosion can harbor and protect microorganisms from the sterilization process, controlling instrument corrosion also aids in eliminating microbial contamination and helps ensure staff and patient safety.

2 Purpose

PRE-KLENZ Point of Use Processing Gel is a ready-to-use, neutral pH gel designed to keep soils from drying out and to initiate the cleaning process on reusable surgical instruments at the point of use. The purpose of this study was to compare the instrument protection of PRE-KLENZ Point of Use Processing Gel and eight other pretreatment products with both stainless steel scissors (floor grade) and Aluminum trays commonly used in the healthcare field.

3 Method

Scissors and trays were prepared for evaluation by washing them in a dilute solution of mild detergent and thoroughly rinsing to remove any processing residues. Scissors were placed in the trays (one per tray). Pretreatment products were dispensed/sprayed to fully cover each instrument. The trays were held under ambient conditions for four weeks, and observations were recorded at regular intervals. Fresh product was applied every two to three days to maintain exposure and mimic repeated use. At the end of the four-week period, the scissors and trays were rinsed clean of product. Final observations were recorded and photographs taken.
PRE-KLENZ Point of Use Processing Gel exhibited superb instrument protection ability. There were no visible signs of rust or discoloration on the scissors or tray after exposure to the product over a period of four weeks. Additionally, the product rinsed easily off both the scissors and tray, even after this extended exposure.

The other pretreatment products did not afford the same instrument protection. Corrosion was noted on the scissors exposed to Blu62™ Pretreatment Foam, EmPower® Foam, and Prepzyme® Forever Wet Instrument Transport Pre-Cleaner Enhanced with Bio-Clean Technology. The scissors exposed to Bio-Zolve Instrument Presoak Spray Gel, OptiPro™ Gel Instrument Pre-Cleaner, Prepclean® Forever Wet Instrument Transport Pre-Cleaner, Prepzyme® Multi-Tiered™ Enzymatic Foam Spray, and ProEZ Foam™ Foaming Enzymatic Spray all showed discoloration and staining on the portion of the scissors that were in contact with the tray. Additionally, there were significant impacts to the soaking trays exposed to these pretreatment products. The tray exposed to Prepzyme Forever Wet Pre-Cleaner with Bio-Clean Technology exhibited patches of corrosion. The trays exposed to seven of the other pretreatment products exhibited staining and discoloration. The discoloration was so significant for Blu62 Pretreatment Foam, Bio-Zolve Presoak Spray Gel, EmPower Foam, OptiPro Gel Pre-Cleaner, and Prepclean Forever Wet Pre-Cleaner that the location of the scissors in the tray is still visible even after the trays were washed, rinsed, and wiped dry.

The physical appearance of the scissors and trays after four weeks of exposure was documented in the following photographs:
Conclusion

Evaluation of instrument protection with pretreatment products is necessary due to the potential for deterioration that can be caused by the extended contact of these products with surgical instrumentation and equipment. The test results demonstrate that damage to the integrity of the metal substrate can occur when exposed to the various pretreatment products over a period of time.

The data for the instrument protection summarized in this report represents continuous exposure to mimic repeated use of PRE-KLENZ Point of Use Processing Gel and eight other pretreatment products from various manufacturers. Under the described test conditions, PRE-KLENZ Point of Use Processing Gel provided the most protection for the stainless steel scissors and the associated tray. The overall appearance and visible condition of the scissors and tray was remarkably better than that of the various other pretreatment products tested.

REFERENCES
1 Bio-Zolve Instrument Presoak Spray Gel is a product of Medline Industries, Inc.
2 Blu62™ is a trademark of Stryker Instruments
3 OptiPro™ is a trademark of Ecolab USA, Inc.
4 EmPower® is a registered mark of Metrex Research, LLC
5 Prepzyme® and Prepclean® are registered marks of The Ruhof Corporation
6 Multi-Tiered™ and Bio-Clean Technology™ are trademarks of The Ruhof Corporation
7 ProEZ foam™ is a trademark of Certol International, LLC