ProEZ Gel™ Aerosol Spray Pre-Treatment Gel

Anti-Corrosion Properties

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1 Introduction

Instrument reprocessing is a crucial part of the daily functions of a hospital and the importance of keeping bodily soils loose and moist on the instruments is paramount in attaining a proper sanitation level post-cleaning. Extended periods of time in between surgeries can lead to hard-to-clean soils as drying occurs, highlighting the importance of pre-treatment products. Pre-treatment gels are used on instruments to begin the cleaning portion of reprocessing immediately following an operation.

These extended periods of time in which valuable instruments are exposed to pre-treatment products can present an issue as they are more susceptible to corrosion damage the longer the exposure. This makes compatibility between the product and the instruments critical. Pre-treatment products should be designed to minimize the damage to and protect the instrument. Inefficient material protection can promote rusting and uneven instrument surfaces which reduces the lifespan of the instrument. This increases the cost to the end user by extending the reprocessing cycle or requiring new instrument replacement.

2 Purpose

ProEZ Gel™ is a ready to use neutral pH pre-treatment gel applied at point-of-use to prevent soils from drying on instruments and devices used in healthcare. To ensure instrument protection, stainless-steel scissors and carbon steel surgical blades will be exposed to ProEZ Gel™ for 72 hours and photographed to document the corrosion effects on the instrument.

3 Method

Stainless-Steel
Stainless-steel scissors are prepared by opening them at the joint and photographing them prior to product application. Enough product to cover the entire surface of the instruments is then applied and the test articles are then allowed to remain covered in product for 72 hours. The 72 hour holding time is meant to mimic an unusually long timeframe in between an operation and reprocessing in which instruments will sit for multiple days at a time. Following the 72 hour period, the instruments are rinsed and dried and photographed. The scissors are assessed for any discoloration, pitting, or rusting caused by exposure to the pre-treatment gel.

Carbon-Steel
Carbon-steel blades are prepared by placing three blades onto a tray separated by at least an inch of space to ensure no contact between the blades. The blades are then sprayed with product and allowed to sit under room temperature conditions for 72 hours before the blades are rinsed, dried, and photographed. The 72 hour holding time is meant to mimic an unusually long timeframe in between an operation and reprocessing in which instruments will sit for multiple days at a time. The blades are assessed for any discoloration, pitting, or rusting caused by exposure to the pre-treatment gel.

4 Results

Stainless-Steel
ProEZ Gel™ demonstrated excellent instrument protection. No signs of rusting, pitting, or other characteristics of corrosion could be determined following a 72-hr exposure.

Fig. 1. *Pre-Application Scissors, Front, ProEZ Gel™ Samples 1-3*

Fig. 2. *Pre-Application Scissors Closeup, Front, ProEZ Gel™ Samples 1-3*

Fig. 3. *Pre-Application Scissors, Back, ProEZ Gel™ Samples 1-3*

Fig. 4. Pre-Application Scissors Closeup, Back, ProEZ Gel™ Samples 1-3

Fig. 5. Product Application on Scissors, ProEZ Gel™

Fig. 6. Post-Application Scissors, Front, ProEZ Gel™ Samples 1-3

Fig. 7. Post-Application Scissors Closeup, Front, ProEZ Gel™ Samples 1-3

Fig. 8. Post-Application Scissors Closeup, Back, ProEZ Gel™ Samples 1-3

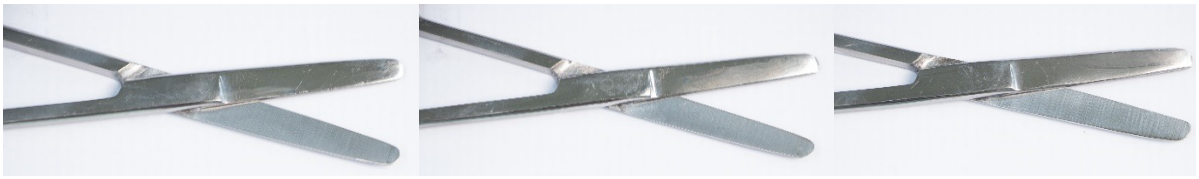

Fig. 9. Post-Application Scissors Closeup, Back, ProEZ Gel™ Samples 1-3

Carbon-Steel

ProEZ Gel™ demonstrated excellent protection of the carbon steel blades. No signs of rusting, pitting, or other characteristics of corrosion could be determined following a 72 hour exposure.

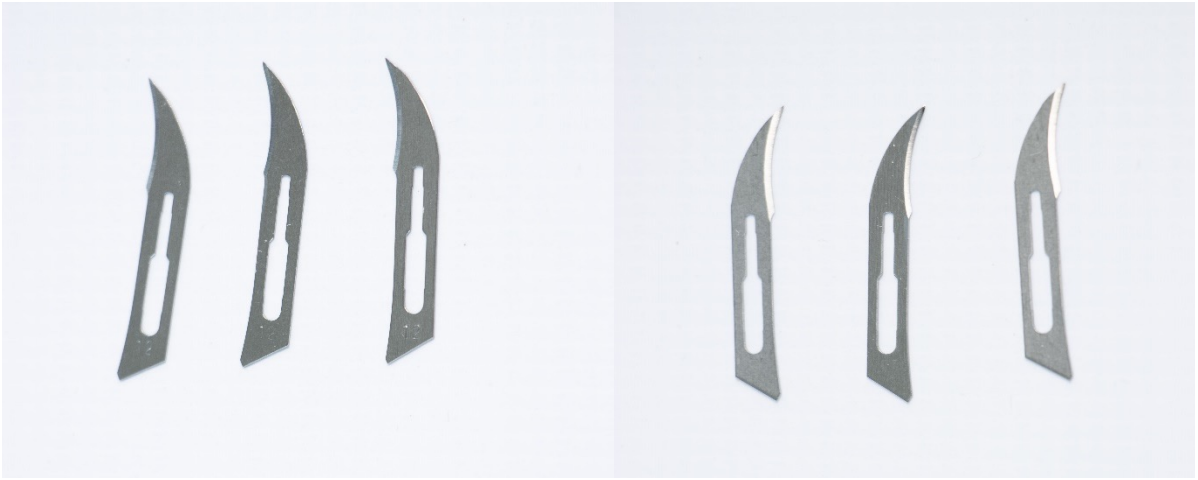

Fig. 10. Pre-Application Carbon Steel Blades, ProEZ Gel™ Samples 1-3, Front (Left) and Back (Right)

Fig. 11. *Product Application on Carbon Steel Blades, ProEZ Gel™*

Fig. 12. *Product Application on Carbon Steel Blades,72-Hours, Pre-Rinse, ProEZ Gel™*

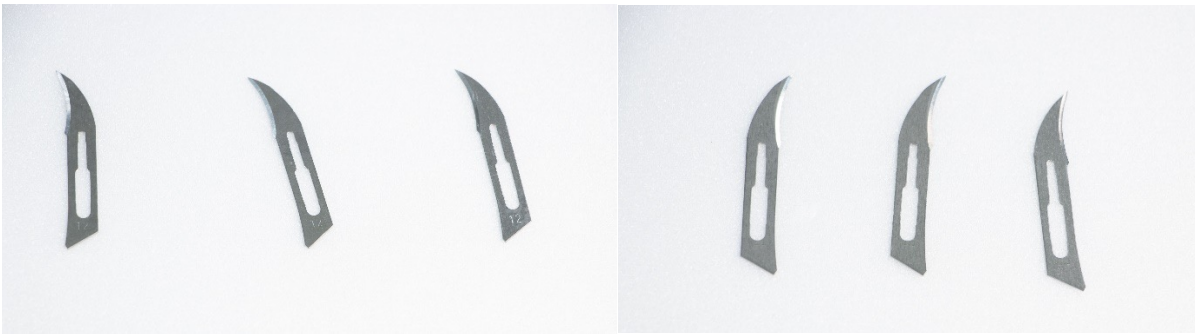

Fig. 13. *Post-Application Carbon Steel Blades, ProEZ Gel™ Samples 1-3, Front (Left) and Back (Right)*

5 Conclusions

The corrosion protection properties of the pre-treatment gels were analyzed by noting any discolorations, pitting, or other alterations to the appearance of the instruments. The results of the experiment demonstrate excellent corrosion protection from the ProEZ Gel™.

ProEZ Gel™ is formulated to protect even sensitive materials such as carbon steel. The carbon steel blades treated with ProEZ Gel™ showed no signs of corrosion, discoloration, or rusting. Under the test conditions described in this experiment, ProEZ Gel™ demonstrates excellent corrosion protection properties of commonly-used stainless-steel instruments and even sensitive metals such as carbon steel.

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