

Summary of Test Results for XEN Cleaning Chemistries & Competitor Products

This report summarizes testing performed at an internal Getinge laboratory and an external testing facility to evaluate the XEN cleaning chemistries and their performance against existing Getinge Clean (GetClean) formulations and other commonly utilized detergent formulations in healthcare facilities for cleaning of medical instrumentation.

Internal Testing

Internal laboratory testing was conducted to evaluate the cleaning chemistries used in the US and to compare their performance, with the aim to determine their equivalence. Test methods included an automated washer disinfectant (WD) cleaning, foaming evaluation, manual cleaning tests, ultrasonic (sonic) cleaning performance, enzyme cleaning performance, enzyme stability, and performance of pretreatment products, lubricants, rinse aids, and acidic detergents. Testing demonstrated that XEN products not only achieved equivalence across all products but also showcased superiority in several cases. Some products demonstrated similar or enhanced performance at lower dosing concentrations, highlighting the advanced formulation of these new detergents. For full product dosing and intended uses refer to the product's IFU and Product Specifications.

Manual Cleaning, Washer Disinfection & Ultrasonic			
GetClean	Method	XEN Equivalent	Method
Renuzyme Ultra	WD	Enzymatic+	WD
			sonic/manual
	manual	QuadX	manual
Powercon Triple Enzyme	WD	Enzymatic+	WD
Renuzyme Plus	WD	Enzymatic	WD
Renuzyme WR	WD	Enzymatic	WD
Sonic 7900	sonic	Enzymatic	sonic/manual
Powercon AL safe	WD	Universal+	WD
Tech Wash III	WD	Universal	WD
Neutrawash Plus	WD	Neutral	WD/sonic/manual
Neutrawash	WD	Neutral	WD/sonic/manual
Powercon Neutral	WD	Neutral+	WD/sonic/manual
Tec Rinse	WD	Rinse	WD
Instrument Lubricant Plus	WD	Instrument Lubricant+	WD/manual

Chamber Cleaning	
GetClean	XEN Equivalent
Acid Detergent	Chamber Shine+
Chamber Cleaner Schedule 7	Chamber Shine+
Chamber Cleaner Schedule 90	Chamber Shine+
Instrument Brightener	Instrument Shine
Stainless Steel Chamber Cleaner	Chamber Shine

Washer Disinfection	
Other Commonly Used Detergents	XEN Equivalent
Alkaline 10X	Universal+
Enzymatic 2X	Enzymatic
Enzymatic 10X	Enzymatic+
Neutral 2X	Neutral
Neutral 10X	Neutral+

External Testing

An independent testing laboratory examined five (5) XEN detergents (Enzymatic, Neutral, Enzymatic+, Neutral+, and Universal+) for soil removal against competitive detergents. These XEN cleaning chemistries feature improved enzymes and a longer shelf life, featuring a group of ultra-concentrated chemistries that promote sustainability by reducing storage and packaging needs.

The study's purpose was to evaluate the cleaning effectiveness of the different detergents using the lowest recommended dose (as determined by the manufacturer) in an automated washer-disinfector.

To test for soil removal, stainless-steel coupons were soiled with artificial test soil, dried, placed into a lidded basket, then processed in a Getinge automated WD. TOSI was used as the cleaning verification test. Two cycles with different detergents for each full cycle program were run to mimic U.S. washers' operation with a combination of the following detergents:

XEN Enzymatic and XEN Neutral were utilized and then compared to STERIS Prolystica® 2x Concentrate Enzymatic and STERIS Prolystica® 2x Concentrate Neutral at a concentration of 1.0 mL/L.

XEN Enzymatic+ and XEN Neutral+ were utilized and then compared to STERIS Prolystica® 10x Concentrate Enzymatic and STERIS Prolystica® 10x Concentrate Neutral at a concentration of 0.2 mL/L.

XEN Enzymatic+, XEN Universal+, and STERIS Prolystica® 10x Concentrate Enzymatic and STERIS Prolystica® 10x Concentrate Alkaline at a concentration of 0.2 mL/L.

After processing, the coupons were visually inspected and then analyzed for protein and hemoglobin concentrations.

Results

All TOSI coupons were free of visible soil after processing.

Residual protein levels for all detergents were less than 0.355 µg/cm². All were well below the 6.4 µg/cm² accepted level for properly cleaned medical instruments.

Residual hemoglobin levels for all detergents were less than 0.863 µg/cm², below the 2.2 µg/cm² accepted level.

All positive and negative controls were at the appropriate levels.

These results indicate that all detergents provided adequate cleaning and demonstrate the cleaning method is efficacious in removing soil.

Conclusions

All five (5) XEN detergents (Enzymatic, Neutral, Enzymatic+, Neutral+, and Universal+) met accepted industry cleaning standards of <6.4 µg/cm² for protein and <2.2 µg/cm² for hemoglobin for medical instruments.

All XEN detergents also demonstrated cleaning efficacy equivalent to similar brands of detergents used in healthcare facilities for cleaning of medical instrumentation.

Based on the equivalency established through external testing and the results seen on the chart on the previous page from internal testing, many XEN detergents are used at a significantly lower dose and therefore can save the department much needed storage space.



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