



Technical Bulletin: Safe and Effective Use of Enzymatic Detergents

- Each container is stamped with the expiration date. Upon expiration, discard unused product.
- **Storage Conditions:** Enzymes are organic and sensitive to heat. Store concentrated product away from heat sources, direct sunlight and avoid room temperatures above 86° F (30° C).
- **Use life:** Enzymes are most effective when diluted immediately before use. After dilution enzymes will begin to break down other enzymes. This process makes the diluted solution less effective over time even with minimal use. Change enzymatic solutions at least once per shift.
- **Use life:** Enzymes break down more quickly when used for heavily soiled items. Best Practice is to discard used solution after single use with orthopedic, gastrointestinal and endoscopy soils.
- **Use life in ultrasonic cleaning tanks:** discard solution after use on heavily soiled loads, or when solution becomes cloudy or at a minimum at the end of each 8 hour shift.
- **Contact time:** Enzymatic detergents are not disinfectants and do not have a specific contact time. While light soils are quickly dissolved in one to two minutes, more time will be needed for moderate to heavy soils.
- **Temperature of use:** Enzymes work best starting at 90 ° F (lukewarm water). If cooler water is used it will slow down enzyme action. Water temperatures over 120 ° F will denature and destroy enzymes. This temperature range applies to both manual and automated processes.
- Certol Enzymatic Detergents are complete products. Do not mix with other chemicals including bleach, disinfectants or other types of detergents. Some chemicals will interfere with or even inactivate the organic enzymes. If using disinfectants or cleaners to clean out sinks and ultrasonic tanks, be sure to rinse thoroughly and drain completely prior to making fresh enzymatic solutions.
- **Rinsing:** Enzymes are protein. It is critical to eliminate protein and detergent residue from instruments and scopes by thorough rinsing. Inadequate rinsing will result in staining as residual proteins from enzymes or organic soils interact with high level disinfectants such as gluteraldehyde. Complete rinsing is made more difficult if detergent is overdosed. "Hard" water over 400 TDS is not recommended for final rinsing (see AAMI TIR34) as it creates spotting.
- **Dosing** of detergents depends on four factors:
 - Type of process - manual or automated. Use lower dosing for automated washers.
 - Quality of water - hard water requires more detergent.
 - Soil load - orthopedic or heavy blood soils use up enzyme action.
 - Quality of detergent - Certol enzymatic detergents are formulated with a high percentage of enzymes and surfactants.Check the accuracy of measuring for both water and detergent.
If water quality is unknown and soils are average, start dosing of Certol enzymatic detergents at 1 oz. / gallon and adjust up or down based on cleaning results or cleaning tests.
- **Safety and PPE:** Enzymes are designed to break up protein. Human eyes and skin are protein and vulnerable to enzymatic detergent especially if aerosolized.
Good quality enzymatic detergents with effective concentrations of enzymes may cause irritation if technicians are not following best practices. Avoid aerosolizing of detergent and bio-soils by keeping items below water line. Avoid using high pressure spray into solution.
Use eye protection, face masks and face shields during cleaning procedures and change face masks frequently or when wet. Use waterproof gowns or aprons during manual processing.
Use nitrile utility gloves: Enzymes will dissolve the latex proteins in latex gloves. Use nitrile utility gloves when handling concentrated enzymatic detergent and during manual cleaning procedures.