

Getinge Clean

Renuzyme WR Plastics Compatibility

Background

Renuzyme WR is a wide-range, enzymatic detergent that contains both protease and lipase enzymes to digest a wide range of organic residues commonly found on surgical instruments. Renuzyme WR is designed for use in washer/disinfectors, cart washers, sinks and ultrasonic baths. Its optimal performance dilution range is between 0.2 to 2.0 oz./gal of water (2 to 16 mL/L), and its optimal performance temperature range is from 70°F to 140°F (21°C to 60°C). This product effectively digests and removes proteins and lipids from a variety of medical devices and instruments.

The data compiled in these experiments show the substrate compatibility between Renuzyme WR and a wide variety of plastics and polymers used in the composition of medical devices. The objective was to expose a number of different substrates to conditions that are representative of instrument processing, and at the same time over exposing the substrates to Renuzyme WR to see if there was any change in weight gain of the sample materials.

Experimental Method

For the experimental design, the maximum optimal concentration of Renuzyme WR (2.0 oz./gal) was used with an elevated temperature of 120°F and a contact time of 48 hours. Each individual substrate was first weighed on an analytical balance, and its mass recorded to the nearest 0.1 mg. Each substrate was then placed in a clean flint glass jar, and covered completely with the Renuzyme WR solution. Prepared jars were then placed in a temperature-controlled oven at 120°F for 48 hours. After 48 hours, the jars were removed, each individual substrate removed, rinsed with deionized water, and allowed to dry for 24 hours. After the drying time was complete, each substrate was weighed on an analytical balance. Each substrate was also visually inspected for any adverse effects (cracks, pits, crazing). All data were recorded and analyzed for verification.

Results

All substrates listed below exhibited less than 1% change in weight, after being subjected to the conditions above with Renuzyme WR. Visual inspection showed no unusual effects, and no cracks, crazing, or pitting of any of the substrates.

Borosilicate Glass	Polyethersulfone (Radel)
Ethyl Vinyl Acetate (EVA)	Polyoxymethylene (Delrin)
High Density Polyethylene	Polyphenylene oxide (Noryl)
Nylon	Polypropylene
Poly (methylmethacrylate) (PMMA)	Polystyrene
Polycarbonate (Lexan)	Polyurethane
Polychloroprene (Neoprene)	Polyvinyl Chloride (PVC)
Polyetherimide (Ultem)	PTFE Fluoropolymer (Teflon)
Silicone Rubber	

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