

Solvay Plastic Performance Testing with PDI Disinfectants

Purpose: Summarize the results on the performance testing of four Solvay plastics when exposed to select PDI disinfectants

Methodology: Solvay polymer tensile bars (ASTM Type 1) were exposed to PDI disinfectants. Disinfectant wipes were applied around the gauge length of each tensile bar. For each polymer type, two sets of experimental bars were conditioned for tensile and impact testing. The bars were placed on a strain jig to induce a 1.5% nominal strain. Concurrently, a control set was placed on the strain jig at 1.5% nominal strain. The bars remained strained for 48 hours; after 24 hours, the disinfectant wipe was reapplied. Tensile specimens were tested against the unexposed control set to measure changes in stress at yield (or break). Impact specimens were tested against the unexposed control set to measure changes in impact strength. Percent retention was calculated per *Equation (1)* [below](#).

$$\text{Equation (1): Retention} = 100 \times \left(\frac{\text{average mechanical property exposed}}{\text{average mechanical property unexposed}} \right)$$

Mechanical property is defined as:

Tensile: stress at yield

Impact: Impact stress

Solvay Materials:

Material Name and Alphanumeric designator(s)
Radel® PPSU (R-5800NT)
Amodel® PPA (A-1145 HS BK 324)
Veradel® PESU (3300 PREM)
Udel® PSU (P-1700 NT 06)

Results:

Results for Tensile Testing				
Material	Sani-24® Spray	Sani-Hypercide™ Spray	Sani Cloth® Prime Wipes	Super Sani-Cloth® Wipes
Udel® PSU	+	+	+	+
Amodel® PPA	+	+	+	Not tested
Veradel® PESU	+	+	+	
Radel® PPSU	IP	+	+	+
+ denotes passing; passing is defined as >90% of retention of stress at yield IP = testing in-progress				

TECHNICAL DATA BRIEF

Results for Impact Testing				
Material	Sani-24® Spray	Sani-Hypercide™ Spray	Sani Cloth® Prime Wipes	Super Sani-Cloth® Wipes
Udel® PSU	+	+	+	+
Amodel® PPA	+	+	IP	Not tested
Veradel® PESU	+	+	IP	IP
Radel® PPSU	+	+	IP	IP
+ denotes passing; passing is defined as >85% retention of impact strength IP = testing in-progress				

Notes: Specimen conditioning and testing guided by ASTM D543, ASTM D638 and ASTM D256.

Ongoing testing to include Kalix® HPPA and Ixef® PARA.