

# BIOSHELL TEST DATA

Freeze/Thaw		
<p>Compares the freeze/thaw times of a freestanding bag to a bag enclosed within a BioShell.</p>	Bag Size	20L
	Fill Level	16L
	Freezer Type	Harris Upright Freezer Model: HLT-32V-8551D39
	Freezer Temperature	-70°C
	Ambient Room Temp	21°C
	Time to Freeze to -70°C: Freestanding Bag	30 hours
	Time to Freeze to -70°C: Bag in BioShell	39 hours
	Time to Thaw to Room Temp: Freestanding Bag	70 hours
	Time to Thaw to Room Temp: Bag in BioShell	73 hours

Bench Drop		
<p>Simulates an accidental drop of a frozen BioShell with a bioprocess bag enclosed from a height of 36" onto a concrete floor.</p>	Bag Size	20L
	Fill Level	16L
	Temperature	-70°C
	Drop Height	36"
	Results (frozen)	Passed
	Results (thawed)	Passed
<p>To determine a pass or fail for the drop test, the bag is first visually inspected for damage on the surface of the bag, its seams and its ports. Once the bag is completely thawed, the bag is again visually inspected for damage or leaking.</p>		

ISTA 2A		
<p>The following tests were performed with a BioShell unit at -70°C, complete with a filled bag, inside a palletized CryoShell insulated shipper. The tests were performed according to ISTA 2A configurations.</p>	Bag Size	20L
	Fill Level	16L
	Freezer Type	Harris Upright Freezer Model: HLT-32V-8551D39
	Freezer Temperature	-70°C
	Rotational Edge Drop	8" (Passed)
	Vibration Test	240 CPM at 4.0Hz for 60 minutes (Passed)
	Compression Test	272lbs for 96 hours (Passed)
	Weight of Unit	13lbs

To learn more call **800.372.3172** or visit **bio-shell.com**