

# Smart Notes

Protect valuable materials  
during fluid transfer  
applications

Ported Closures

## Q A

### How can I prevent potential material contamination during fluid transfer operations?

**Ported closures** are an excellent option for fluid transfer into and out of containers for media, APIs and other critical vaccines and biologics applications.

Often closures are lined with “friction fit” liners which are not attached to the inside of the closure. This means that when assembling or disassembling your fluid transfer systems, there is the potential for the liner to fall out into your high value contents, introducing the chance of contamination and the potential need to dispose of the contained liquid. Liners that are sonically-welded or otherwise attached in a chemical-free method solve this problem and protect the integrity of the stored materials.



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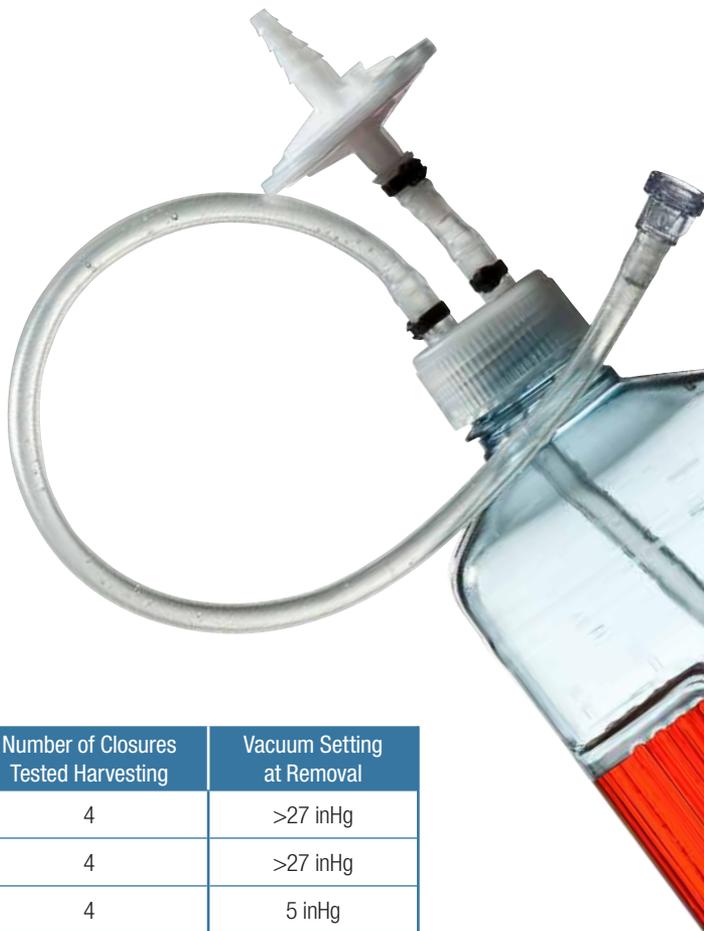
# Why is it important to choose the right ported closure for my application?

## Ported closures minimize risk of contamination. Protect your valuable contents during fluid transfer.

Testing was performed to compare the Thermo Scientific™ Nalgene™ Biotainer™ ported closures with a competitive ported closure for the ability to retain the liner in the cap. Retention of the liner ensures that it does not fall out during application or removal of the ported closure, protecting the often highly-valuable materials contained in the bottle.

### Test Procedure

Ported closure liners were tested using a suction-cup fitting attached to a variable-pressure vacuum line which was applied to the liner. Liners that were not welded or attached firmly to the closure were easily removed, while sonically-welded closures could not be removed, even pulling the highest vacuum possible with the fixture – the vacuum seal was broken before the liner could be pried free.



Description	Liner Adhesion Method	Number of Closures Tested Harvesting	Vacuum Setting at Removal
Biotainer 2-Ported Closure	Sonically-Welded	4	>27 inHg
Biotainer 3-Ported Closure	Sonically-Welded	4	>27 inHg
Competitor C 2-Ported Closure	Friction Fit	4	5 inHg

### Summary

Nalgene Biotainer ported closures are a reliable, safe way to transfer fluids into and out of Biotainer bottles without risking product contamination.

▶ [Visit thermoscientific.com/portedclosures](http://thermoscientific.com/portedclosures) for product details.

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