



INTRODUCING THE BEST REEFER WALL PROTECTION.



Antimicrobial Testing of Refrigerated Trailer Interior Linings

Antibacterial performance (Gram negative) with test method ISO 22196

Sample	Bacterial count (CFU/cm ²)		Log reduction*	% reduction*
	t=0h	t=24h		
Untreated control	1.1 x 10 ⁴	2.2 x 10 ⁵	-1.31	0.00
Versitex [®] AM	1.1 x 10 ⁴	2.6 x 10 ¹	3.91	99.99

* Reduction calculated versus sample 1 at t=24h

Antibacterial performance (Gram positive) with test method ISO 22196

Sample	Bacterial count (CFU/cm ²)		Log reduction*	% reduction*
	t=0h	t=24h		
Untreated control	1.3 x 10 ⁴	9.5 x 10 ³	0.14	27.33
Versitex [®] AM	1.3 x 10 ⁴	<1.00	≥3.98	≥99.99

* Reduction calculated versus sample 1 at t=24h

Antifungal performance with test method ASTM 2180

Sample	Fungal count (CFU/cm ²)		% reduction*
	t=0h	t=48h	
Untreated control	4.13 x 10 ³	1.4 x 10 ⁵	0.00
Versitex [®] AM	4.13 x 10 ³	1.4 x 10 ⁴	90.22

* Reduction calculated versus sample 1 at t=48h

Conclusion

The antibacterial test ISO 22196 reveals excellent activity against both Gram-negative and Gram-positive bacteria for Versitex[®] AM-treated samples (~4 log reductions). The antifungal test ASTM 2180 also shows very good activity for both Versitex[®] AM-treated samples (>90% reduction).

Your Trusted Source

As a trusted source for FDA-compliant liners, US Liner has been setting the standard for safe food transport for the past 20 years. Pairing our products with SANAFOR[®] ensures the most effective and compliant solution for safeguarding your cargo.

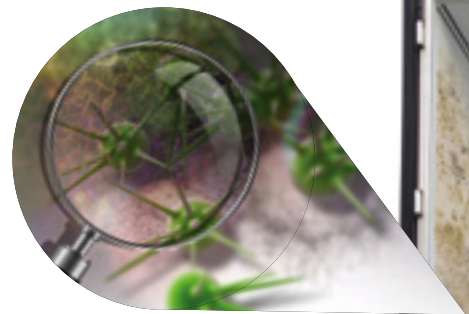
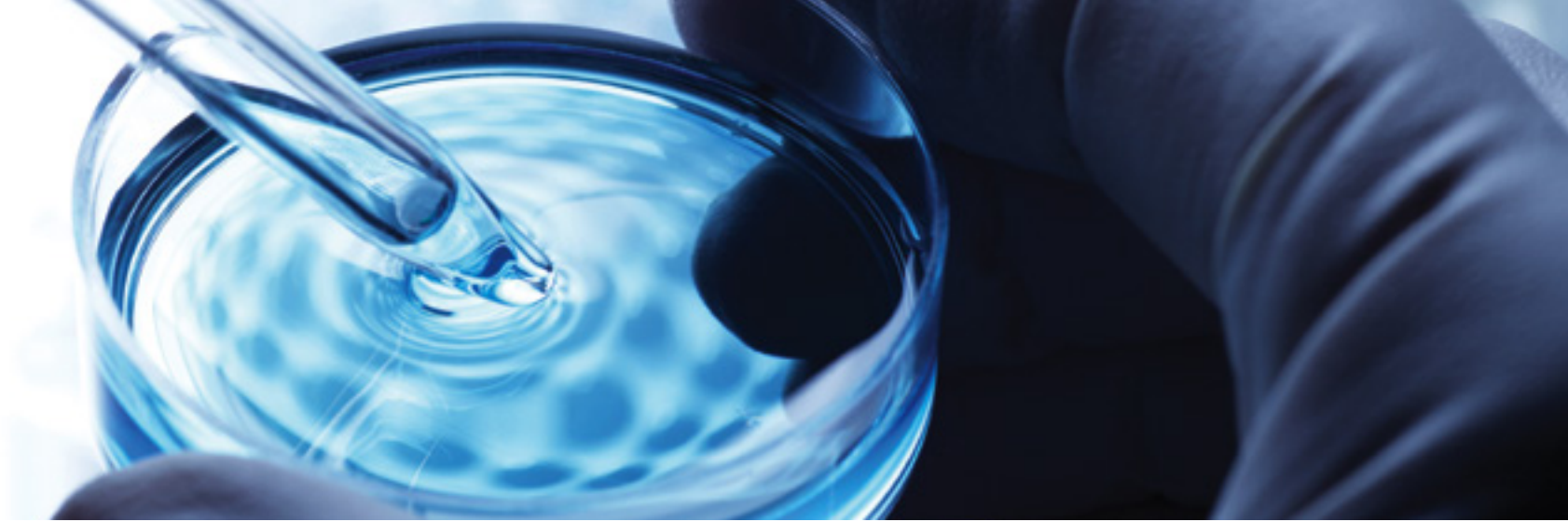
For More Information

To speak with one of our sales specialists about Versitex[®] AM, please call 1-800-875-4637 or email info@uslco.com. To learn more about our products, visit www.uslco.com.



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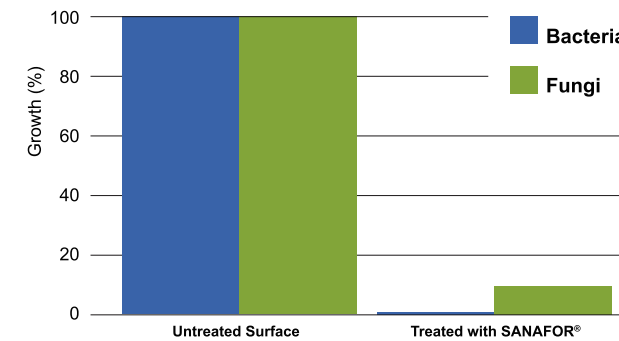




Untreated Trailer



Treated with Versitex[®] AM



Proven Effectiveness

Versitex[®] AM panels provide effective antimicrobial protection against bacterial growth. In laboratory tests at usage levels equivalent to that incorporated into Versitex[®] AM walls, SANAFOR[®] demonstrated a 99.99% reduction in Gram-negative and Gram-positive bacterial growth using the ISO 22196 24-hour test method. The untreated control had little to no reduction in bacterial growth.

Versitex[®] AM panels provide strong antimicrobial protection against fungal growth. In laboratory tests at usage levels equivalent to that incorporated into Versitex[®] AM walls, SANAFOR[®] demonstrated a 90% reduction in fungal growth using the ASTM E2180 48-hour test method. The untreated control had no reduction in fungal growth.

When surfaces treated with SANAFOR[®] PO5 were abraded with scouring pads and sand paper, washed and dried, they still demonstrated reduced bacterial and fungal growth by over 99.99%. SANAFOR[®] has also been tested and proven at extreme hot and cold temperatures.

SANAFOR[®] at a Glance

The addition of SANAFOR[®] to Versitex[®] AM refrigerated walls provides broad-spectrum, built-in antimicrobial protection that:

- Inhibits the growth of bacteria, mold, fungi and algae that can cause stains, odors and contamination on the surface of wall liners
- Is an environmentally and consumer-safe technology
- Has NSF and FDA approvals for food transport and is registered with the EPA
- Is a preventive technology that is continuously active in reducing microbial growth on surfaces
- Is incorporated into thermoplastic wall layers during the manufacturing process, enabling permanent protection that is effective on surfaces for the service life of the trailer
- Has been tested and proven at extreme hot and cold temperatures
- Further ensures compliance with the Food Safety Modernization Act (FSMA) and Sanitary Transportation of Food (STF) regulations



Unmatched Protection and Compliance

The panel walls and surfaces of a trailer can be a breeding ground for bacteria, mold, mildew and fungus – and in this moist and humid environment, microorganisms can double in number every 20 minutes.

US Liner is the only provider of FDA-compliant refrigerated walls for reefer fleets. Now, to further ensure the highest safety standards for your cargo, we offer Versitex[®] AM walls with SANAFOR[®] antimicrobial technology.

Versitex[®] AM was developed exclusively for US Liner by the manufacturer of SANAFOR[®] antimicrobial technology to ensure the best antimicrobial protection available for reefer

fleet panels while offering unmatched regulatory compliance. Unlike competitive products, Versitex[®] AM with SANAFOR[®]:

- Is proven to be highly effective in tests against both bacteria and fungi
- Is FDA compliant
- Contains a safe, environmentally sound, zinc-based antimicrobial ingredient that is certified by NSF International, registered with EPA and manufactured under GMP standards

SANAFOR[®] is also approved for use in Europe under BPR and REACH requirements and in several Asia Pacific countries according to their specific guidelines.