Ultra High Barrier Metallized PET Laminates

For Vacuum Insulation Panels (VIPs) in Temperature Controlled Packaging

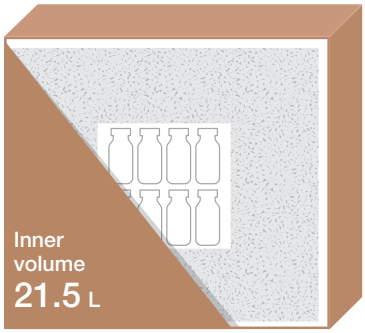
Application Overview

VIPs for thermal packaging - the cool and compact solution for cold chain shipping

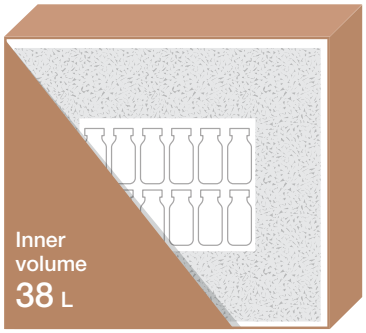
With VIPs, shipping containers become an economical transportation option when transit times are long, or ambient temperatures are extreme. VIPs can turn cold chain shipping boxes into a realistic overland transportation choice, and also effectively reduce cold chain air costs since their slim profile markedly increases payloads.

Compact and efficient VIPs deliver greater payload efficiency by increasing internal volume

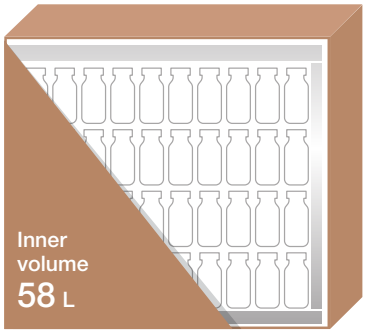
Air Shipment, 72 hours, 2-8 °C 115 L outer volume
Typical relative internal payload volume comparison for different insulation methods.



Polystyrene



Polyurethane



Vacuum Insulation Panels

The right laminate for the right core

Avery Dennison Hanita offers a full range of laminate and envelope options for all shipping challenges - whether cost- or performance-based. Fumed silica cores protected by Avery Dennison Hanita metallized polyester (MetPET) laminates are ideal for thermal packaging containers demanding peak efficacy and exceptional long-term functionality*. And where cost is an issue, fiberglass cores with Avery Dennison Proprietary Surface Treatment (PST) MetPET laminates prove an outstanding choice thanks to their high barrier to permeation by air.

MVTR values <0.01 [gr/m2day] ASTM F-1249-90 38°C 90% RH

The right laminate for the right core

What counts when it comes to the actual insulating performance of VIPs is not the center of panel thermal conductivity (λcop) but rather the effective thermal conductivity (λeff), which includes the thermal bridge effect. Al-foil laminates produce an edge effect that substantially decreases insulation performance. This is especially true for smaller boxes, where the relative impact of heat transfer via the edges is more pronounced. The most effective thermal packaging containers use nanoporous silica cores protected by exceptionally high barrier metallized laminates. These films nullify the damaging effects of moisture vapor, oxygen, and nitrogen while preserving the vacuum and maintaining insulation efficacy. Though initially more expensive to manufacture, shipping containers using fumed silica and MetPET laminates deliver outstanding long-term functionality.

Fiberglass cores also offer a cost-effective solution when combined with the highly efficient PST MetPET laminates from Avery Dennison Hanita, due to exceptionally low air permeation of the films, and lesser thermal bridging.

Avery Dennison Hanita offers a full range of laminate options as either master rolls or envelopes.

Laminate selection

Requirement	Core Type	Envelope Construction	Suggested* Laminate for Envelope
Shipping cost savings through increased payload volume or decreased outer volume; enhanced performance for challenging weather or travel conditions.	Fumed Silica	MetPET	V07421 \ V08621B \ white appearance V09621W
	Fiberglass	MetPET	V085HB3+V085HB3

About Avery Dennison

Avery Dennison (NYSE: AVY) is a global materials science and manufacturing company specializing in the design and manufacture of a wide variety of labeling and functional materials. Its products include labels, radio frequency identification (RFID) solutions, tapes and fasteners, and medical applications. Avery Dennison serves customers in a wide range of industries, including non-durable consumer goods, retail apparel, logistics and shipping, durable goods, and healthcare. Headquartered in Glendale, California, the company employs over 30,000 employees in more than 50 countries. Reported sales in 2017 were $6.6 billion.

Learn more at www.averydennison.com

See our full range of laminate products at www.hanita.averydennison.com

For further information contact barrier.laminates@eu.averydennison.com

*The information contained herein is believed to be reliable but Avery Dennison makes no representations concerning the accuracy or correctness of the data. This product, like any other should be tested by the customer/user thoroughly under end user conditions to ensure the product meets the particular requirements. Independent results may vary.

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