

WHITE PAPER

# Unlock the Secrets to Optimal Cold Chain Management with EPS

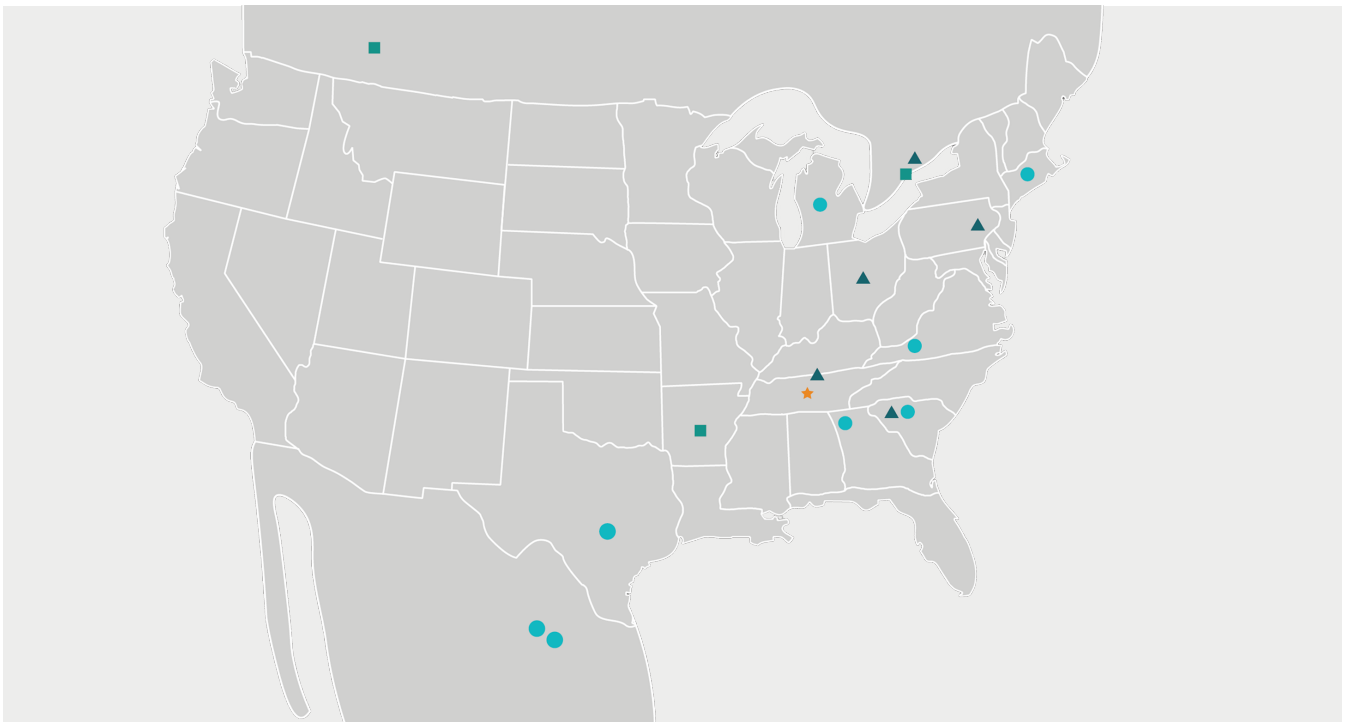


**Alleguard** 

# WELCOME OUR BUSINESS

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Alleguard is the leader in engineering, delivery, and service of custom foam solutions. What began as six regional businesses has become an international network of designers, engineers, manufacturers and specialists working as one to provide unmatched service and support to our customers. Explore our integrated network of manufacturing and logistics hubs designed to help support your project, manage your budget, and protect your business..



From molded coolers to custom solutions, Alleguard's Cold Chain products are designed to maintain quality and prevent loss of temperature-controlled products from produce to pharmaceuticals.

# 2024 COLD CHAIN SOLUTIONS

## PACKAGING SOLUTIONS INSIGHT

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As per the recent projections, the market when it comes to temperature-controlled packaging solutions is most likely to reach almost \$26.2 billion by 2030, thereby showcasing a robust yearly growth rate of more than 11.2%.

It is well to be noted that in 2024, one can anticipate to go through a major growth when it comes to numerous sectors. The growth, apparently, is going to be fuelled by an increase in consumer demand when it comes to both fresh as well as frozen food, the broad pharmaceutical and biotech sectors, and of course, a continuous expansion when it comes to e-commerce.<sup>1</sup>

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1 <https://www.packagingworldinsights.com/featured/innovations-bolstering-2024-cold-chain-packaging-solutions/>



# COMMITTED TO QUALITY

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At Alleguard, we work every day to produce the highest quality solutions that help shape and grow your business. But our commitment to quality goes far beyond our products. We always strive to do the right thing by our customers, our partners, and our colleagues by being dependable, collaborative, and accountable in all of our actions.

For clients in industries from beverage to biotechnology, Alleguard has the experience, expertise, capabilities, facilities and personnel to create your custom solution on time and on budget.

## Industry-Leading Shape Molding Capabilities

Alleguard engineers and designers work with the latest CAD-CAM technologies as well as other innovative techniques to create any design or shape your project calls for.

All shape molded work is carried out in house at our ISO 9001:2015 certified facilities and our automotive plants are IATF – 16949 certified. Alleguard's hands-on approach ensures our products meet specifications, starting with overseeing the tooling creation, and certify products with consumer-specific testing.

# INDUSTRIES SERVED

Alleguard EPS packaging cold chain solutions is ideal for food, pharmaceutical, and life science products. It maintains product safety, security, and temperature stability throughout the cold chain delivery process.

## LIFE SCIENCES/PHARMACEUTICAL

When pharmaceutical products are exposed to temperature variations due to packaging failures, it affects their quality, their efficacy, and most importantly, their safety. Alleguard's pharmaceutical packaging solutions maintain a constant temperature, making them the gold standard for preserving the safety and security of sensitive pharmaceutical products. We create custom insulating and form-fitting packaging to protect sensitive pharmaceutical and life science products during transportation for hospitals, medical suppliers, device manufacturers, and researchers as well as clients in the pharmaceutical industry.

EPS packaging is the gold standard for pharmaceutical and life science products; it maintains product safety, security and temperature throughout the cold chain. For pharmaceutical leaders such as Merck, Wyeth and Abbott patient safety is paramount which is why they rely on EPS packaging to deliver life saving medicine and vaccines around the world.<sup>1</sup>

<sup>1</sup> The Effects of Cold Chain Logistics and Technology on Global Freight Distribution, Hofstra University, 2007

## FOOD AND BEVERAGE

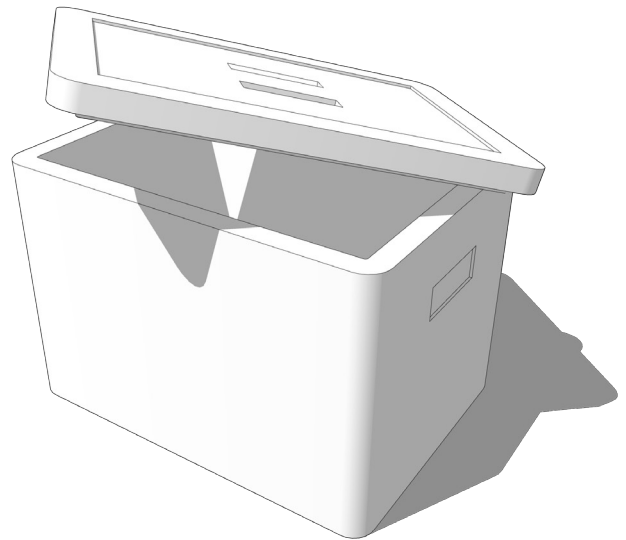
Alleguard specializes in creating foam solutions that protect perishable food and beverages from spoilage, waste, and damage. Our customized cold-chain products maintain constant temperatures that protect against microbial growth and preserve nutritional value. Alleguard Food and Beverage products also lower shipping costs for direct-to-consumer food delivery. We have 16 locations in three countries, so you're never far from custom EPS foam solutions for perishable food and beverage products.



# PRODUCT OFFERING

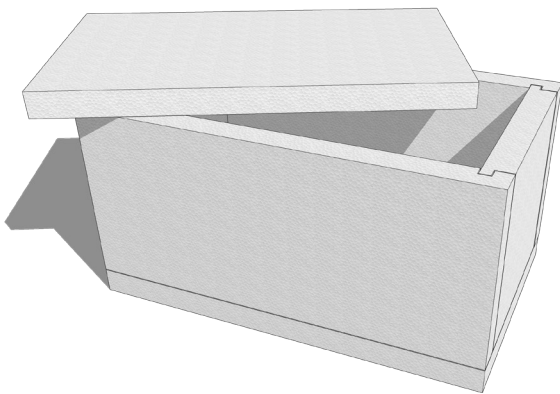
## Molded Insulated Shipping Coolers

Alleguard molded insulated shipping containers offer lightweight, cost-effective temperature control for various temperature ranges making them ideal for frozen, refrigerated, perishable, and temperature-sensitive items from food to pharmaceuticals. Our international network of manufacturing facilities means you can source all of your cold-chain needs from a single vendor.



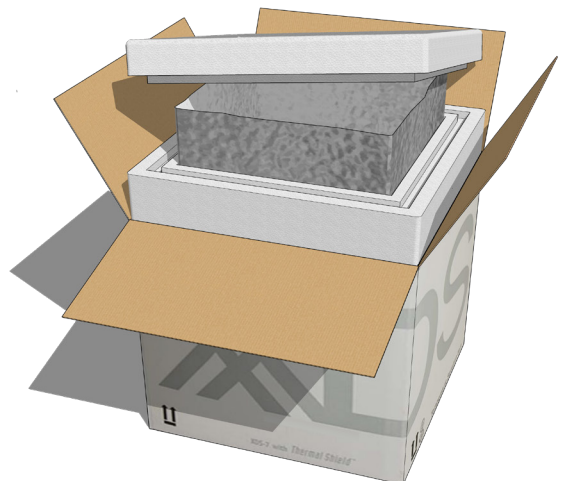
## 6 Panel Liners

Alleguard 6-Panel Box Liners transform any size box into an instant insulated shipping container. Both EPS and Graphite Polystyrene can be used to line the inside of a box, creating a cost-effective, climate-controlled shipping solution for products requiring temperature control. Our 6-Panel Box Liners can be customized to any box dimension and desired thickness.



## Extended Duration Shipping Containers

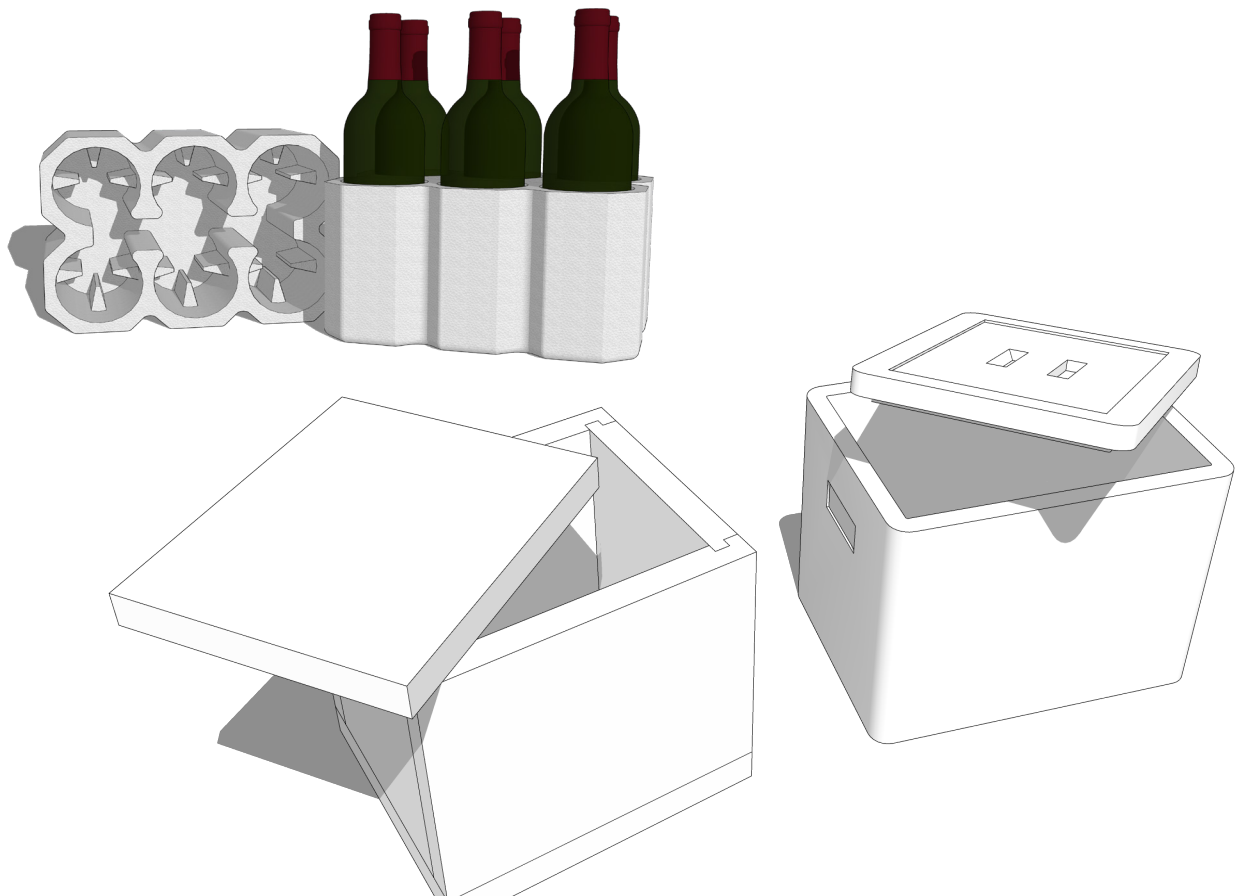
XDS™ Extended Duration Shipping containers are sustainable, cost-effective, proven performers. XDS containers provide up to 75% savings in product cost compared to polyurethane or isocyanate containers and reduce the amount of dry ice needed by up to 50% by weight. Tests have proven that our XDS containers extend product integrity below -7° C for five to twelve days.



# CUSTOM SOLUTIONS

## Preserve Product Integrity With Custom Cold Chain Packaging

Our custom cold chain packaging solutions offer lightweight, cost-effective temperature control that maintains the integrity of frozen, refrigerated, perishable, and temperature-sensitive products. Whether your product is kitted or requires gel packs, we can design and create the total packout that's perfect for your product. Our custom solutions are third-party tested at ISTA certified labs to ensure effectiveness.



# WHY EPS?

## Benefits of Expanded Polystyrene:

- In packaging, the reduced weight of EPS decreases shipping costs and facilitates ease of handling, offering economical and user-friendly solutions to manufacturers and end-users alike
- 100% recyclable EPS a zero-landfill, green solution in Alleguard's offering.
  - Cradle to Cradle evolution: Regrind and Recycled Resin
  - Steam and water to produce; No HFC's, No Formaldehyde, or Color Dyes
- Cost effective, light weight solution
- Geographically well positioned to serve key cold chain markets.

## What we're doing

EPS is sustainably manufactured, recyclable, energy efficient, and endlessly reusable. Alleguard works with customers to gather used EPS product for recycling, and we're constantly exploring ways to expand our efforts. We also recycle all our scrap for internal use.

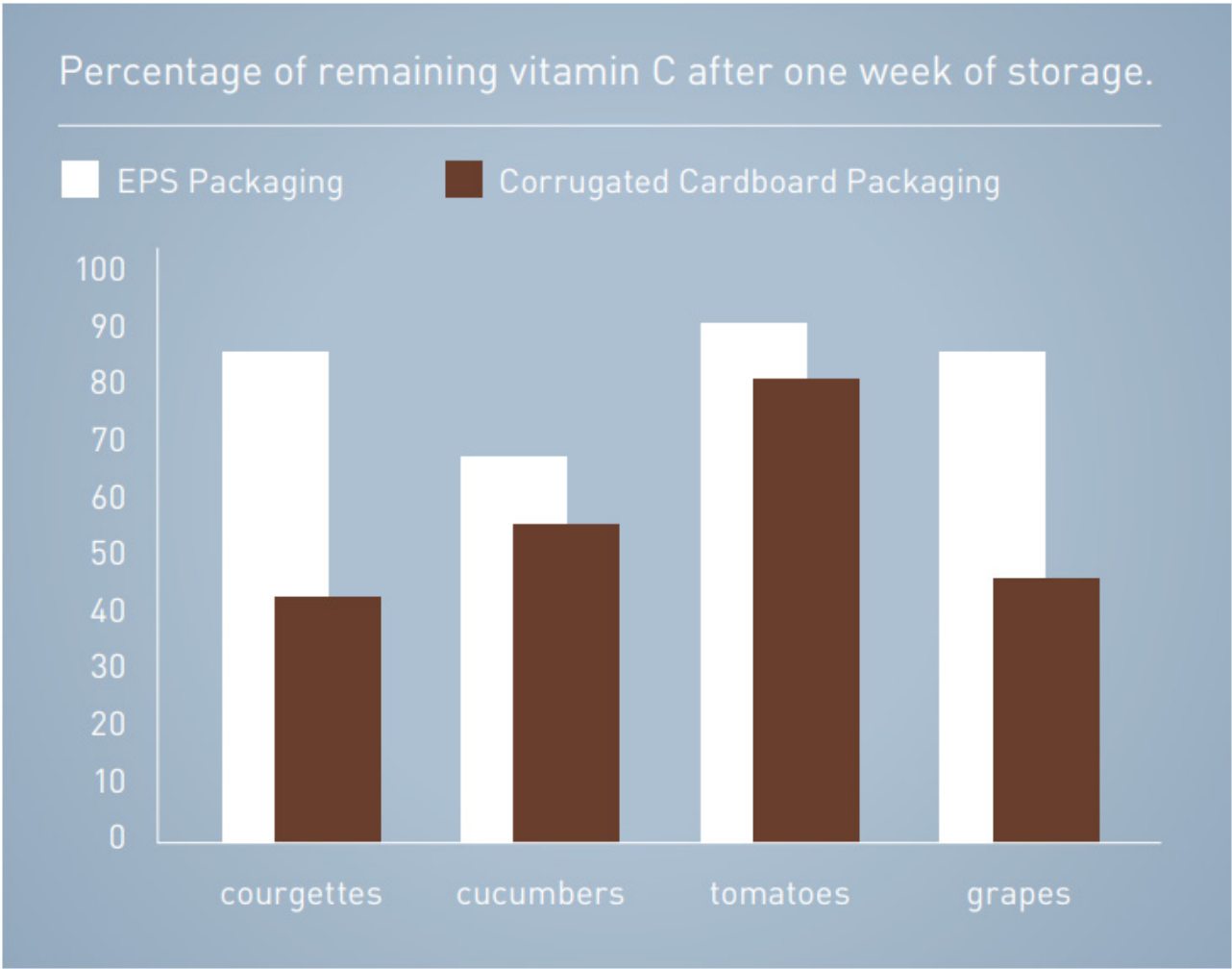
Alleguard produces and provides recycled foam solutions and are always seeking new partnerships and innovations to increase the recycled content in our products.

We also capture emissions from foam production, providing our entire network with key learnings to reduce greenhouse gas emissions.



# EPS VS. OTHER MATERIALS

A recent life cycle analysis by PricewaterhouseCoopers measured the environmental impacts of several fish box packaging systems, including EPS and cardboard. Results show EPS is a sustainable material for fresh fish, with similar or better results than alternative packaging. The advantages of EPS are its low carbon impacts and clean manufacturing technologies which result in minimal energy and water inputs with no production waste.



Effects of EPS Packaging Box on the Freshness Extension of Agricultural Produce, Korea Food Research Institute, 1997.

# SUSTAINABILITY

## Creating Products That Protect The Future

We pride ourselves on being good stewards of our environment and customers' visions. EPS helps create a more sustainable world by making buildings more energy efficient, reducing greenhouse gas emissions, preventing product damage and waste, and reducing shipping fuel usage, just to name a few. Alleguard's international network of facilities and multi-material capabilities enable us to supply the full range of products including Biodegradable Foam, Expanded Resins and Recycled EPS.



# THANK YOU

EPS COLD  
CHAIN SOLUTIONS

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