

The Cold Chain Market is Growing: Can the Logistics Sector Keep Up?

Cold chain logistics is a market that has had explosive growth throughout the years. There has been a high demand with consumers wanting fresher products that maintain their shelf life. For companies to meet the demand of their customers, the cold chain sector must keep up.

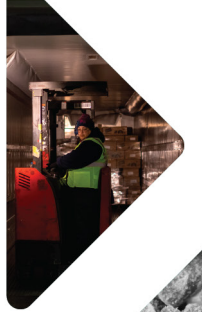


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CHAPTER ONE

Intro

At the time of this publication in 2021, the world was amid the Covid-19 pandemic that began in early 2020. Thus, due to the world's current state and the increased demand for perishable products, the pressure is on for cold chain logistics to remain up to speed.

Cold chain logistics refers to the management of temperature-controlled products throughout the supply chain in order to maintain quality and shelf life.

Solutions for these products' transportation and storage include cold warehousing, refrigerated trucks, refrigerated rail cars, and insulated containers. Something as small as a two-degree change in temperature can compromise the product's quality, making cold chain logistics management even more critical.

While cold chain logistics management is necessary for more obvious industries like food and beverage, several other industries utilize it. The chemical industry requires a robust cold chain when it comes to shipping pharmaceuticals. Medications and prescription drugs require delicate handling. A fluctuation in temperature can cause a pharmaceutical to become ineffective, or worse, deadly. Floral retailers also use cold chain logistics for their flower deliveries. A well-managed cold chain is what helps preserve the life of the dozen roses you give or receive on Valentine's Day or the poinsettias you purchase for the holidays. Freshness and high quality are two factors that consumers keep in mind when buying flowers. Having proper cold chain management can help maximize these factors and many more processes in the floral industry. Finally, photographic film utilizes cold chain logistics. Cold storage for the film is incredibly particular because it must warm back up to room temperature before being loaded into a camera. Factors such as humidity and contaminants play a part in the quality of the photographic film, making storage like insulated containers even more critical. It is no secret that cold chain logistics helps a variety of products arrive at their destination unscathed.

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CHAPTER TWO

Different Levels of Temperatures Needed

The chill level in a cold chain shipment all depends on what is being transported. While the cold chain sector aids in keeping a plethora of industries' products at the proper temperature, the requirements are particular for each category and commodity. There are various categories under the cold chain umbrella that have different temperature ranges. The refrigerated category does not have the exact requirements as the frozen or the cryogenic category.

We've broken down the cold chain umbrella to show you all the different temperatures that cold chain products need to survive.

- **(-28 °C to -30 °C) Deep freeze – seafood, meat exports**
- **(-16 °C to -20 °C) Frozen – meat, certain types of produce**
- **(2 °C to 4 °C) Chill – fruits and vegetables, fresh meat, certain dairy products**
- **(2 °C to 8 °C) Pharma – medicines, vaccines**
- **(12 °C to 14 °C) Cool-chain – fresh produce, processed food, over-the-counter drugs**

When it comes to pharmaceuticals, the temperature range of two to eight degrees Celsius is the largest category by value. Most medicines and vaccines are being shipped at these temperatures to preserve quality and shelf life. While most pharmaceuticals land in the refrigerated category, there's been a recent demand for other temperature zones. With the COVID-19 vaccines recently underway, there has been an increased demand for maintaining pharmaceuticals at deep frozen or cryogenic temperatures. Products shipped via cold chain logistics rely on these temperature ranges to remain consistent. If not, then the quality of the product becomes compromised.



CHAPTER THREE

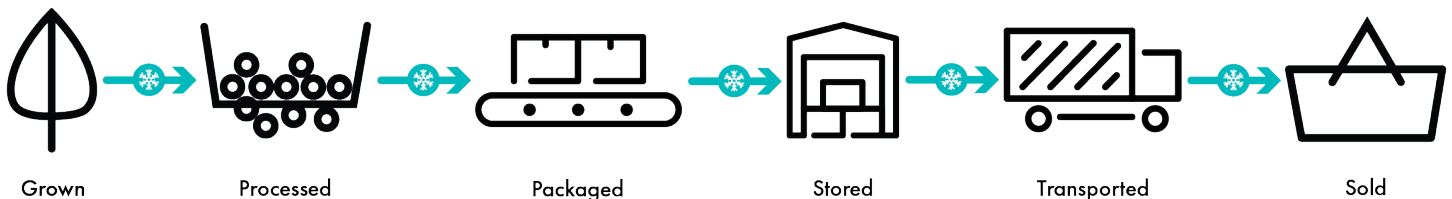
Cold Chain End-to-End

The cold supply chain begins when the product is grown or produced. There are several points between production and when the product arrives at its ultimate destination where an integrated supply chain provider's knowledge and expertise come into play. Below are some infographics that show the end-to-end supply chain process.

What is Cold Chain Logistics?



Major Sectors: Food & Beverages / Bio-Pharmaceuticals



The Cold Chain Logistics Infrastructure



CHAPTER FOUR

Recent Growth of Temp-Controlled Commodities

A large part of the growth of temperature-controlled shipping can be attributed to the COVID-19 pandemic, which began in 2020 and is still ongoing at the time this was written. It caused people to stay at home more and stock up on household goods. Even once the pandemic is over, temperature-controlled shipping is only expected to continue down its path of growth.

Logistics and the food industry counts for 70% of the total product costs.

There has recently been an increased focus on food and pharmaceutical safety, two markets in which temperature-controlled logistics is often necessary. Run a Google search on cold shipping for either, and you'll see pages among pages of the rules and regulations. It is vital to ensure these kinds of goods arrive in their best condition as these items are perishable and time-sensitive.

Over the past several years, there has been a recent shift in consumer buying, focusing on purchasing more cold commodities such as food, groceries, and medicine online. Services offering online grocery delivery came into play, such as Amazon Fresh and Walmart Grocery Delivery, along with other temperature-controlled and boxed meals like Misfit Markets, HelloFresh, and ButcherBox. According to MarketsandMarkets, the global refrigerated transport market estimates an increase in growth to USD 21.6 billion by 2025, with an estimated CAGR of 5.8 percent from 2019 to 2025. Advancements in the technology of refrigerated systems and the future of multi-temperature systems are predicted to create more growth and opportunity in the cold chain logistics sector.

Refrigerated Food & Beverage Growth

The food and beverage industries are what most think of first when thinking of refrigerated logistics. In fact, logistics for the food industry counts for 70 percent of the total product cost.

┌ Estimated global refrigerated transport market growth to \$21.6 Billion by 2025 - MarketsandMarkets ─┐

As stated earlier, consumer purchasing is changing. They want fresh local food not just during the season but year-round. They want to be able to cook more fanciful meals at home. Thus, more items need to be shipped from farther distances away, even to other countries.

Refrigerated Food & Beverage Growth Cont.

Additionally, with diseases such as diabetes, high blood pressure, obesity, and more on the rise, many are looking to healthier lifestyles and adding organic food to their diet. They wish to use less preserved food.

One of the largest and fastest growing segments of the U.S. food market is organic food.

That only brings an increase in temperature-controlled shipping because of the perishability of the food.

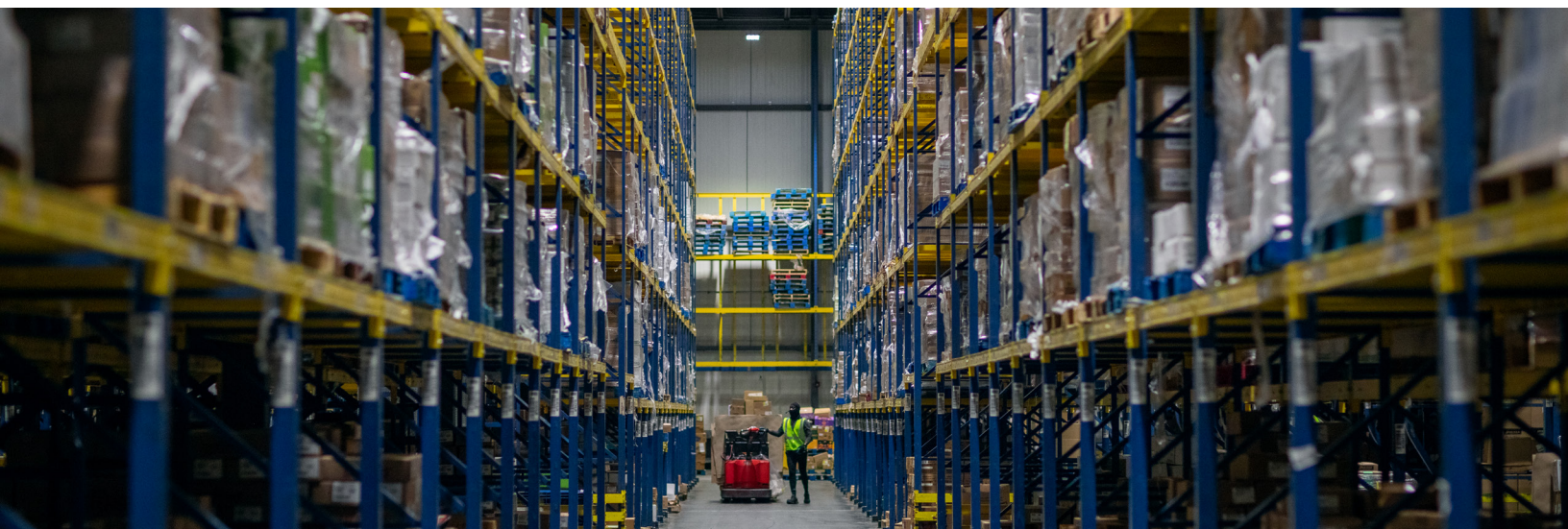
Refrigerated Pharma Growth

Roughly 80 percent of pharmaceuticals require temperature-controlled transportation. According to Pharmaceutical Commerce's Annual Biopharma Cold Chain Sourcebook, the growth of temperature-controlled pharmaceutical products is more than doubling at the rate of non-temperature-controlled pharmaceutical products. What contributes to that growth is the rise in biologic pharmaceuticals like vaccines and lab samples and more personalized medicine for particular genetic ailments. These are all sensitive materials that cannot withstand much variance in temperature.

80% of pharmaceuticals require temperature-controlled transportation

According to the Coherent Market Insights Analysis, specialty and biotech pharmaceuticals is the fastest growing segment in the industry. Sales of cold chain pharmaceuticals, such as Insulin, are growing at 7.1 percent annually.

Thus, this increased demand for temperature-controlled transportation from industries such as food and beverage and pharmaceutical require tremendous efforts from the cold chain logistics sector.



CHAPTER FIVE

Strains on the Capacity of Temp-Controlled Shipping

Cold chain logistics has been growing due to higher demand for refrigerated and frozen goods. With a widespread consumer preference in online shopping, customers expect their products to arrive on time and in mint condition. Whether it be pharmaceuticals or fresh produce, there's been an increase in demand for perishable items to arrive more than safe enough for consumption. The question is, can the shipping industry meet this demand?

New & Improved

Many companies are working on making more refrigeration units that also provide better quality. The newer reefers utilize battery operation to drive the compressor rather than using diesel engines. This innovation is both cost-efficient, eco-friendly, and great for clients looking to cut down on costs. Better units equate to higher quality products upon delivery.

IoT Devices

Reefers have become easier to monitor and track due to their recent shift in becoming Internet of Things (IoT) devices. With the ability to detect temperature fluctuations and ensure the freight's safety in real-time, the room for error becomes smaller. IoT devices allow for high-level connectivity into all supply chain solutions. With the help of innovative solutions such as IoT devices, shippers can meet the demand for cold chain shipping.

Meet The Demand

One solution to this supply and demand issue is to increase capacity, and less-than-truckload (LTL) carriers have been working on ways to do just that. A lot of LTL carriers are producing larger fleets of refrigerated containers to meet consumer demand. According to DAT, from 2019 to 2020, the reefer load-to-truck ratio was up 86.6 percent. With the help from carriers aiming to meet that demand, that ratio could potentially rise even more. To learn more about carrier capacity, check out our Carrier Capacity Crunch whitepaper: <https://trinitylogistics.com/whitepaper/the-carrier-capacity-crunch/>.

「2019-2020: Reefer load-to-truck ratio was up 86.6% - DAT」

CHAPTER SIX

Why Costs in Cold Chain Logistics are Rising

A rise in demand typically comes with a price increase, but that's not the only reason why cold chain costs increase. Each cold chain shipment is unique and has specific regulations and temperature controls. Because of this, there are several external factors that cause the cost of cold chain shipments to fluctuate.

Cold chain logistics is an expensive industry to be in for shippers and carriers alike. The price of refrigerated trucks and insulated containers becomes greater as volume increases. One refrigerated truck and trailer can cost as much as \$60,000 to purchase. This doesn't include the additional costs to carriers in order to maintain working equipment and cleanings. Refrigerated trucks are simply more expensive for carriers to upkeep. Rising fuel and insurance costs to carriers only add to their work-related expenses. All of that translates to higher rates for shippers.

Additionally, carriers hold a lot of responsibility when hauling temperature-controlled freight. The stricter the regulated temperature needs to remain, the higher the cost will be because meeting those specific regulations and temperature tracking isn't an easy task. These requirements can be challenging for an inexperienced carrier. If you want the person handling your freight to have knowledge and experience in cold chain, you should expect to put more money down on a trustworthy carrier.

One of the most expensive products that ship through cold chain is pharmaceuticals. While shipping pharmaceuticals is high cost, the product itself is just as pricey due to its delicate nature. Any change in temperature for an extended amount of time can cause medication or vaccines to become ineffective or, worse, deadly. The room for error when shipping pharmaceuticals is extremely slim. If a carrier makes a mistake during transportation, it costs a lot of money to fix it. Roughly 20 percent of pharmaceutical products are damaged during transport because of temperature fluctuations. These damages estimate a \$35 billion loss every year. If you think it's expensive to ship pharmaceuticals, imagine how expensive it is to have errors in the shipment.

The expense of the cold chain industry can be intimidating. There are so many external factors to consider when shipping cold chain products. The investment made into this industry is well worth it. Investing in experienced carriers and utilizing innovative transportation pays off when your freight arrives at its destination in perfect condition.

CHAPTER SEVEN

Stay Ahead of the Game

The cold chain sector may be getting more competitive, so how can you stay ahead of the competition with your logistics? Here are two ways you can take control over your logistics and remain prepared for when times may be challenging in transportation.

1) Gain access to technology for logistics management.

A transportation management system (TMS) can shine during tough times. A TMS gives you visibility into your supply chain and logistics that you never had before. By viewing your logistics data and reporting all in one place, you'll be able to see what's working and what may need some improvement. You can better manage your freight spend, find efficiencies, analyze lanes and carriers. All of this can come in hand to drive your business ahead of the rest.

Even better than simply having a TMS to help manage your logistics is also having a Team of experts to guide you along the way. At Trinity, our Managed Services Team is here to help your business become better at your logistics. Every quarter, our Team analyzes, produces, and presents Quarterly Business Reviews to make it easy for you to digest your data and determine how to escalate your company's growth.

2) Find a reliable and worthy provider to outsource your logistics.

What do we all do when times get tough? We seek help. The same should go for your company's logistics. It can be hard handling it all on your own, so building a relationship with a reliable logistics provider is a good idea. Working with a third-party logistics company (3PL), like Trinity, allows you to focus on what you do best and leave the transportation logistics to the experts.

Yet, you can't just choose any 3PL. You want to make sure you find one with the experience and resources you need to succeed in your cold chain market. With Trinity Logistics being a part of the Burris Logistics family, we have the resources you need and the experience you can trust to take care of your cold chain from end-to-end. We can offer you customized integrated solutions with many modes, qualified providers, and technologies. Through our growing network and strong relationships, you can trust that your transportation logistics will be in good hands.

CHAPTER EIGHT

Conclusion

The cold chain sector and temperature-controlled transportation are growing, and it does not look to be slowing down anytime soon. Consumers' wants are changing to include many more temperature-controlled items, and the logistics sector is seeing more demand than ever. More demand equals higher costs to transport temperature-controlled freight. With capacity predicted to remain tight and rates high, make sure that your business won't fall behind. Keep your growth going by looking into managing your logistics. Find help in technology with a transportation management system or consider outsourcing your logistics to an expert 3PL. Times may be challenging and the market competitive, but you don't have to go at it alone.

Learn more about our cold chain solutions and Request a Quote:

<https://trinitylogistics.com/shippers/industries/food-and-beverage/>

Learn about "A Fully Connected Cold Chain" by watching this webinar with our parent company, Burris Logistics:

<https://trinitylogistics.com/a-fully-connected-cold-chain-with-burris-logistics/>

