

Keep Cool We Care



Hapag-Lloyd

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Fresher at the destination

Our reefer containers provide environmentally friendly technology, reliable temperature control as low as -40°C/-40°F and a variety of precise controlling alternatives for all special cargo requirements. Hapag-Lloyd operates a container fleet of more than one million TEU in total, among them various special equipment types and one of the most modern refrigerated container fleets in the field. Careful servicing and inspections before every assignment are just as natural as continual research projects looking into further improving future generations of refrigerated container. This protects both the environment and your cargo. Many years' experience, modern equipment and a highly integrated global network of more than 100 liner services with competitive transit times make Hapag-Lloyd your premium partner for temperature-sensitive goods.



Your advantages at a glance:

Especially fresh For Controlled Atmosphere we provide a wide range of technologies such as ExtraFresh, ExtraFresh Plus, AEM (Air Exchange Management) and Liventus/Maxtend. The interior atmosphere is controlled to delay respiration and to extend shelf life for fruits and vegetables. Spoiling and mould is minimised. We have the best solution ready for almost every type of cargo. You will find further information on the various technologies on page 6.

Especially precise With some fruits, such as bananas, the slightest temperature deviations are decisive for the quality of the cargo when it reaches its final destination. Therefore, precise temperature control has the highest priority for us. For chilled products with temperatures above -10°C/14°F the advanced refrigerated container technology allows us to reduce the maximum variation to 0.5°. For frozen products below -10°C/14°F the refrigerated container technology operates with a maximum variation of just 1.0° only.

Especially dry Apart from temperature our reefers can also reduce relative humidity with set values between 50% and 95%. For flower bulbs, Hapag-Lloyd reefers have a special 'bulb mode' which automatically provides an optimal atmosphere for transportation.

Especially gentle Our refrigerated containers can be programmed in advance for automatic temperature change up to ten times during one voyage. With this technology, sensitive cargo can be gently cooled in stages and the ripening process for fruits can be accelerated before arrival at the destination.

Especially well ventilated For certain goods, such as fresh fruits or ferns, a precisely controlled ventilation system contributes decisively to quality assurance. With Hapag-Lloyd refrigerated containers, up to 280 m³ of fresh air per hour can be automatically supplied. The ventilation flaps can be opened with a time delay of up to 72-hours, an important advantage when the cargo is not sufficiently pre-cooled.

Especially friendly To protect our environment, Hapag-Lloyd continually carries out research into better solutions with great success. We have reduced average energy consumption by more than 50% in the last eight years without making compromises on temperature control, and at the same time improving performance. Naturally, all refrigerants used in our reefers is CFC-free. This reduces the carbon footprint of your product.

Especially reliable High-value, sensitive reefer cargo from the pharmaceutical, chemical or healthcare industry requires particularly careful handling by an especially reliable partner. Here we offer not only our modern equipment and our extensive experience, but also special internal processes that provide extra protection for your high-value cargo.

Especially safe and secure All data relevant to quality, such as temperature, humidity, O₂ and CO₂ content as well as fresh air supply setting, is recorded. With current technologies, Hapag-Lloyd is successfully carrying out tracking and tracing for highly sensitive cargo. Location, temperatures and events are monitored. A 24/7 technical expert team can respond to automated alerts triggered by extended power-off times during transit.

Especially large payload Use of the most modern materials and refrigeration units ensures lower weight for our refrigerated containers and higher payload capacity for our customers. With Hapag-Lloyd reefer equipment, our customers benefit from the highest load capacities available. On average a benefit of 100 to 200 kg compared to others in the market.

Especially cold Hapag-Lloyd refrigerated containers can maintain a constant temperature between -40°C/-40°F and 30°C/86°F. Even with outside temperatures of up to 50°C/122°F the refrigerated container technology allows us to keep your cargo fresh and deliver the best quality to the destination.

Especially fast cooling especially powerful refrigeration units assist in pre-cooling processes in cases where cargo has not been properly pre-cooled. The considerably faster pull-down times with Hapag-Lloyd reefers enable a higher quality and a longer shelf life for your products.



Controlled Atmosphere (CA)

With the ability to change the composition of the air in a reefer and thus to control the ripening process of 'living' cargo such as fruit or plants, the products reach their destination both considerably fresher and in better quality. Products can be transported over greater distances, opening up new market potential. This makes our refrigerated containers a real cost-effective alternative to airfreight. We can offer the following Controlled Atmosphere technologies:

ExtraFresh

A technology designed to control and preserve the desired transport atmosphere for fruits and vegetables. Hapag-Lloyd ExtraFresh takes advantage of the natural fruit respiration process to slow down the ripening and thus maintain the cargo's quality and extend the product's shelf life. Hapag-Lloyd ExtraFresh containers are equipped with oxygen (O₂) and carbon dioxide (CO₂) sensors, membrane technology and an automatic fresh air ventilation system. We offer you the latest controlled atmosphere technology to provide the optimum transport conditions for your fruits and vegetables.

ExtraFresh Plus

ExtraFresh Plus is preferred for commodities requiring increased CO₂ levels, for example blueberries and stone fruits. A full CA service from the beginning of the journey to the final destination of the cargo. This technology allows for a pre-injection of an individual gases (N₂ and CO₂) after which it utilizes the ExtraFresh CA system to maintain and actively control the CO₂ and O₂ levels during transit. With the ExtraFresh Plus, Hapag-Lloyd offers an alternative for the Everfresh technology.

Air Exchange Management (AEM)

With technologies like AFAM+, AV+ or eAuto-fresh, the CO₂ content in the reefer container can be increased by up to ten per cent depending on cargo, by using the ventilation flaps. This results in a delayed ripening process. All the systems are suitable for climatic products that release CO₂ into the surrounding air.

Liventus & Maxtend

Liventus and Maxtend use the same principle as AFAM+ and eAutofresh. However, here an individual gas mixture is initially injected into the reefer. The use of these technologies provides additional quality assurance for the product.



Other key products

Remote Reefer Monitoring

Our Remote Reefer Monitoring system offers additional transparency and high-level safety for your temperature-sensitive and high-value reefer cargo, with a focus on interchange locations (e.g. terminals) and inland transport (e.g. barge, rail, truck). The new tracking technology comes as a full service from Hapag-Lloyd with installation of a modem connected to the reefer control panel. The technology provides 24/7 monitoring for every important parameter like supply and return air, humidity, ventilation, power-off periods and Cold Treatment transport. Remote Reefer Monitoring can trigger alerts and initiate a response from our reefer experts and engineers.

Cold Treatment

Cold Treatment is a special post-harvest process for perishable products to meet quarantine requirements. By maintaining the goods at a specific temperature for a predetermined, uninterrupted period, Cold Treatment or Cold Sterilisation aims to eliminate insects such as the fruit fly. With the Cold Treatment process, pesticide treatments can be avoided. Reefer containers are fitted with temperature probes to measure the cargo pulp temperature. Temperatures are recorded and presented to the national authorities at the destination prior to the release of the cargo. If the Cold Treatment protocol requirements are fulfilled, the national authorities will grant import approval.

High Value Pharmaceuticals

The pharmaceutical industry is a global industry with a steadily increasing demand for reefer container transportation. Pharmaceutical transport often involves high-value cargoes. Hapag-Lloyd applies a special high-value process for all reefer cargo exceeding a value of USD 500,000 per container. Within this process a dedicated expert team consisting of container engineers, cargo and insurance specialists evaluate the feasibility of each high-value business prior to acceptance to ensure safety precautions are met.



Reefer cargo handling

While preparing your refrigerated transport we recommend you consider:

- the optimal temperature requirement
- the fresh air ventilation requirement (in cbm/hour)
- the transport time
- the practical shelf life of the product
- the volume of cargo
- the packaging materials and cartons used
- the recommended stowage pattern
- the required documentation, including legislative requirements

Before and during stuffing we recommend you consider:

- the container is set at the optimal temperature and ventilation levels
- cargo is never stowed above the red load line
- cargo is stable and evenly stowed (weight should be distributed evenly for maximum stability and the entire floor should be covered)
- the total cargo weight does not exceed the maximum payload of the container
- the total weight of the container (including container, cargo, chassis and genset) does not exceed the road limitations in any country crossed during transport

- if cargo is palletized dunnage material placed in the centre channel between pallets can avoid shifting cargo
- cargo is blocked and braced as necessary
- frozen or chilled cargo requirements are followed

For frozen cargo:

- pre-freeze cargo before stuffing
- ensure that fresh-air ventilation is CLOSED

For chilled cargo:

- pre-cool cargo before stuffing
- set unit at carrying temperature, not lower (a lower set point will not improve the cooling process and may damage cargo)
- set fresh air ventilation as required

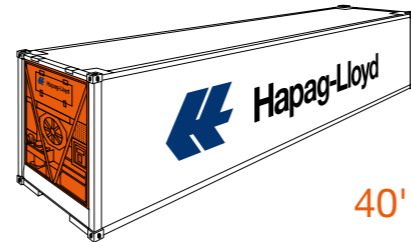
Technical details

Refrigerated Container (Temperature-Controlled Container)



8' 6" high	Inside dimensions				Door openings		Weights			Capacity	Hapag-Lloyd serial number excerpt	
	Length	Width	Height	Max. stow. height (to load line)	Width	Height	Max. gross	Tare	Max. payload			
	mm ft	mm ft	mm ft	mm ft	mm ft	mm ft	kg lbs	kg lbs	kg lbs	m ³ ft ³		
	5,450 17' 10½"	2,284 7' 5⅞"	2,267 7' 5¼"	2,184 7' 2"	2,290 7' 6⅞"	2,264 7' 5⅞"	30,480	2,905	27,575	28.2	HLXU	371450-371949
		2,280 7' 5¾"	2,259 7' 4⅞"	2,159 7' 1"			67,196	6,404	60,792	996	HLXU	374050-375049
	5,446 17' 10⅜"	2,293 7' 6¼"	2,255 7' 4¾"	2,155 7' 7⅞"			32,000	2,860	29,140	28.1	HLXU	372800-373799
		2,290 7' 6⅞"	2,263 7' 5⅞"	2,163 7' 1⅞"			70,547	6,305	64,242	1,006	HLXU	375350-375849
Non-Foodstuff	5,454 17' 10¾"	2,290 7' 6⅞"	2,263 7' 5⅞"	2,163 7' 1⅞"	2,316 7' 7⅞"	2,290 7' 6⅞"	31,400	2,770	28,630		HLXU	171150-171249
		5,535 18' 1½"	2,316 7' 7⅞"	2,331 7' 7¾"			2,211 7' 3"	69,220	6,110	63,118		HLXU
		2,284 7' 5⅞"	2,270 7' 5⅞"	2,150 7' 5⅞"	2,290 7' 6⅞"	2,264 7' 5⅞"	30,480	2,900	27,580	28.7	HLXU	171250-171643
							67,196	6,393	60,803	1,014		

Refrigerated Container (Temperature-Controlled Container)



9' 6" high	Inside dimensions				Door openings		Weights			Capacity	Hapag-Lloyd serial number excerpt			
	Length	Width	Height	Max. stow. height (to load line)	Width	Height	Max. gross	Tare	Max. payload					
	mm ft	mm ft	mm ft	mm ft	mm ft	mm ft	kg lbs	kg lbs	kg lbs	m ³ ft ³				
	11,578 37' 11¼"	2,280 7' 5¾"	2,525 8' 3⅞"	2,425 7' 11½"	2,276 7' 5⅞"	2,535 8' 3¾"	34,000	4,300	29,700	66.7	HLXU	676100 - 676599		
	11,599 38' ¼"	2,290 7' 6⅞"	2,545 8' 4⅞"				2,290 7' 6⅞"	2,557 8' 4⅞"	34,000	4,420	29,580	67.6	HLXU	877530-880529
	11,580 37' 11⅞"	2,290 7' 6⅞"	2,540 8' 4"	2,420 7' 11¼"			2,569 8' 5⅞"	34,000	4,450	29,550	67.3	HLXU	870000-872099	
							74,957	9,810	45,146	2,380	HLBU	904000-904999		
Controlled atmosphere technology (ExtraFresh)	11,590 38' ¼"	2,290 7' 6⅞"	2,540 8' 4"	2,420 7' 11¼"			34,000	4,570	29,430	67.4	HLBU	904000-904999		
							74,956	10,075	64,881	2,381				
Controlled atmosphere technology (EverFresh)		2,280 7' 5¾"					34,000	4,800	29,200	67.4	LN XU	965000-965999		
							74,956	10,582	64,374	2,380				
Non-Foodstuff	11,580 37' 11⅞"	2,290 7' 6⅞"	2,543 8' 4⅞"	2,423 7' 11⅜"	2,294 7' 6¼"	2,550 8' 4⅞"	34,000	4,550	29,450	67.4	HLXU	777000-777484		
		11,590 38' ¼"	2,294 7' 6¼"	2,594 8' 1⅜"			2,474 8' 1⅜"	2,290 7' 6⅞"	2,569 8' 5⅞"	34,000	4,660	29,340	67.9	HLXU
							74,956	10,273	64,683	2,398				

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If you have any queries on reefer business, please contact your Hapag-Lloyd sales representative or the nearest Hapag-Lloyd office. For more detailed advice on the packing of refrigerated containers please consult our Container Packing brochure (available on our website in the press and media/publications section). We are present in 112 countries to meet your needs. For contact details of our almost 600 offices worldwide please visit:

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