



# MSC iREEFER FAQs

## 1. MSC iREEFER SOLUTION

### 1.1 WHAT IS MSC iREEFER?

MSC iReefer is a reefer container equipped with an IoT (Internet of Things) device to collect and transmit data.

### 1.2 HOW DOES MSC iREEFER WORK?

The IoT device on the reefer unit transmits telemetry data (e.g. temperature inside the container) and GPS position. MSC iReefer uses a combination of technologies to communicate and transmit this information effectively.

Cellular networks: These containers are equipped with IoT devices that use GSM (Global System for Mobile Communications) networks to transmit data in real-time. This ensures continuous monitoring and updates, even when the container is on the move.

Satellite communication: For areas where cellular coverage is limited, such as in the middle of the ocean, satellite communication is used. This ensures that data transmission remains uninterrupted, providing visibility even in remote locations.

### 1.3 WHAT IF THE CONNECTION IS LOST?

The MSC iReefer unit continues to log data locally even when there is no connection. This data is stored and can be transmitted once the connection is restored.

### 1.4 WHAT ARE THE BENEFITS OF MSC iREEFER?

Tracking your cargo's location is essential, but monitoring its condition is invaluable. MSC iReefer gives you real-time visibility into your shipment's position, temperature, humidity and overall journey reducing the risk of cargo damage or loss and helping you optimize efficiency.

MSC iReefer empowers you to enhance supply chain operations and improve your decision-making process—all from one seamless platform. Available via myMSC and API with our remote tracking and monitoring solution, you have full control of your reefer shipment!

### 1.5 HOW CAN I PURCHASE MSC iREEFER ?

You can access the MSC iReefer Essential and Pro packages through our myMSC eBusiness platform.

If you already have an account, simply log in. If not, you'll need to create one.

#### For your existing bookings or your cargo in transit:

- Our Essential package is free; you can access your reefer bookings/shipments on myMSC by selecting the “MSC iReefer” section in the main menu.
- If an MSC iReefer was allocated to your booking/shipment, you will see it in your dashboard, from there you can access Essential visibility and/or can purchase an upgrade to Pro.



Dashboard



Shipping instruction



eDelivery



Quotes & tariffs



Free Time, Detention & Demurrage



**iReefer**



eBooking



Documents



Tracking

## For your future bookings: Booking Process Update – Effective June 5th

When you're booking a reefer container through myMSC, you'll now see a banner promoting **MSC iReefer Pro** on the booking summary page - just before you submit your booking.

Please note that the **Essential** visibility package isn't something you can select during the booking process. Instead, if you're assigned an MSC iReefer container by your local agency (depending on equipment availability) you'll automatically receive Essential telemetry data.

If you choose to upgrade to **MSC iReefer Pro**, once your selection is confirmed, your designated booking agency will take the necessary steps to support your request.

## 1.6 WHAT ARE THE DIFFERENT PACKAGES AVAILABLE TO ACCESS MSC iREEFER DATA?

WHAT YOU GET	ESSENTIAL	PRO	ULTIMATE
<b>DATA FREQUENCY</b>	12hrs	12hrs/1hr	12hrs/1hr
<b>Unlimited users (POL parties / Booking Party, Shipper, Contract Holder)</b> Use your MyMSC.com account to access iReefer without any additional steps	✓	✓	✓
<b>Container overview and predicted vessel ETA</b> View all your completed and in-transit shipments, including a predicted vessel arrival time (ETA)	✓	✓	✓
<b>Container journey log and graphs</b> Status + graphs with in-transit supply & return temperature and ambient temperature	✓	✓	✓
Status + graphs + log with in-transit supply & return temperature, relative humidity and ambient temperature readings plus key milestone events	X	✓	✓
<b>Container GPS location</b> View the last transmitted GPS location of your reefer container	X	✓	✓
<b>CA overview (O2/CO2 monitoring)</b> Status + graphs with in-transit CA readings	X	✓	✓
<b>CT overview (USDA probes monitoring)</b> Status + graphs + log with in-transit CT readings	X	✓	✓
<b>Off-Power &amp; Defrost periods</b> See when the container has been off-power and defrost activated	X	✓	✓
<b>Unlimited DataLog downloads (abstract of telemetry data)</b> Use your MyMSC account to access iReefer portal without any additional step	X	✓	✓
<b>API integration</b> Push-based API enabling raw data to flow directly into your system of choice when received from the reefer container	X	X	✓

[Advanced Reefer Container Monitoring | MSC](#)

## 1.7 CAN I CANCEL MY ORDER ONCE I HAVE PURCHASED THE MSC iREEFER PRO PACKAGE IN myMSC?

No, as the data will be visible as soon as you confirm the acceptance of the price and Terms and Conditions.

## 1.8 ARE THERE ANY DATA VISIBILITY RESTRICTIONS?

Yes, there are geographical limitations to MSC iReefer purchases. If a shipment is destined for or passing through a region under US sanctions, it will not be visible in myMSC.

## 1.9 DO I NEED A SOPHISTICATED IT SET UP TO ACCESS MSC iREEFER DATA?

- For the Essential and Pro packages, all you need is a myMSC account and internet access via a tablet or computer.
- For Ultimate package, it will depend on your existing supply chain management system. Our API experts are here to assist you.

Yes, there are geographical limitations to MSC iReefer purchases. If a shipment is destined for or passing through a region under US sanctions, it will not be visible in myMSC.

## 1.10 AT WHAT STAGE OF MY SHIPMENT CAN I PURCHASE MSC iREEFER SOLUTION?

You can purchase MSC iReefer Pro solution at your eBooking stage on myMSC. Just before submitting your reefer cargo booking, you will see a banner inviting you to upgrade to Pro. Follow the steps and your MSC agency will manage the rest.

### UPGRADE TO iREEFER PRO

Unlock exclusive features and benefits by upgrading to iReefer Pro. Enjoy additional **telemetry data, container GPS location, and unlimited DataLog downloads for your shipment equipped with the iReefer device.**

## 2. myMSC FUNCTIONALITIES

### 2.1 WHEN DOES THE MSC iREEFER DATA FLOW START AND FOR HOW LONG IS IT AVAILABLE ON myMSC?

MSC iReefer data will be available until 30 days after empty received at container yard (trip end). Telemetry starts after the empty container is picked up by shipper and powered on, and will available until 30 days after the end of the container trip.

### 2.2 IS THE DATA SHOWN IN REAL-TIME?

The MSC iReefer will communicate in near-real time. When connected to power and in range of a cellular network signal (or satellite if onboard of a connected Vessel), the reefer can send updates hourly.

### 2.3 IS DATA ALSO AVAILABLE WHEN THE CONTAINER IS OUT AT SEA?

The modem, similar to a mobile phone, requires proximity to a cellular network antenna or a satellite network on a connected vessel to upload data. Onboard a non-connected vessel, if it is below deck or approximately 12 miles offshore, a network signal will not be available, and the modem will not provide live updates. When the vessel approaches land and the mobile network signal is restored, the modem will upload all the data, including its buffered history.

### 2.4 DO I HAVE THE POSSIBILITY TO DOWNLOAD DATA FOR ANY SHIPMENT?

Data download is available within the myMSC MSC iReefer section for every container, where you have purchased MSC iReefer Pro.

### 2.5 CAN I USE MSC iREEFER DATA FOR CLAIMS PURPOSES?

As per our Terms and Conditions on myMSC, 'No cargo claim will be submitted by a customer solely based on any MSC iReefer data anomalies registered during a voyage.'

## **2.6 WHICH SHIPMENT PARTIES WILL HAVE ACCESS TO THE DATA?**

Shipper, booking party and contract holder related to a reefer booking/shipment can access MSC iReefer Essential with a valid myMSC account.

As per the Terms & Conditions, by placing an order, the customer (any of the three parties above) confirms having prior written authorization of the contract entity under the relevant sea freight contract of carriage to receive MSC iReefer data for the relevant shipment and indemnifies MSC for any loss suffered or incurred as a result of a failure by the purchasing party to obtain this authorization.

## **2.7 HOW CAN I SHARE DATA WITH A 3RD PARTY THAT HAS NOT BEEN INCLUDED AS A CONTRACTING PARTY IN THE SHIPMENT (E.G., CUSTOMS, FOOD AUTHORITIES, OTHERS)?**

You have the option to download data extract in .csv format in the iReefer section for all MSC iReefers upgraded to Pro. You are welcome to share the data, at your discretion.

## **2.8 CAN I SET UP ALERTS AND NOTIFICATIONS ON MSC iREEFER ESSENTIAL AND MSC iREEFER PRO?**

Alerts and notifications will be available soon.

## **2.9 WHERE CAN I GET SUPPORT IF I HAVE QUESTIONS OR NEED HELP?**

Please go through our FAQ as you may find the answers you are looking for in this section. If you need further assistance, please contact your local MSC agency.

# **3. REEFER CONTAINER MONITORING**

## **3.1 WHY ARE THERE TEMPERATURE FLUCTUATIONS DURING TRANSPORTATION?**

As the container may be exposed to varying ambient temperatures during transport, its internal temperature may fluctuate. During periods without power, the unit is unable to cool or heat, resulting in short-term temperature variations. This is a normal occurrence.

Another potential cause could be improper stowage of the cargo within the container. Blocked airflow can lead to temperature deviation. Additionally, certain types of cargo, such as climacteric fruits and vegetables, undergo respiration, a process that generates heat. The extent of this impact on the return air temperature depends on the respiration rate.

During defrost cycles, the evaporator motors are turned off. During these cycles, ice is cleared from the coil using heat. This heat does not enter the container since the evaporator motors are inactive. However, the return air sensor, located just above the evaporator, will record relatively high temperatures for brief periods. This is a normal situation.

Lastly, any malfunction of the container could also result in temperature deviations.

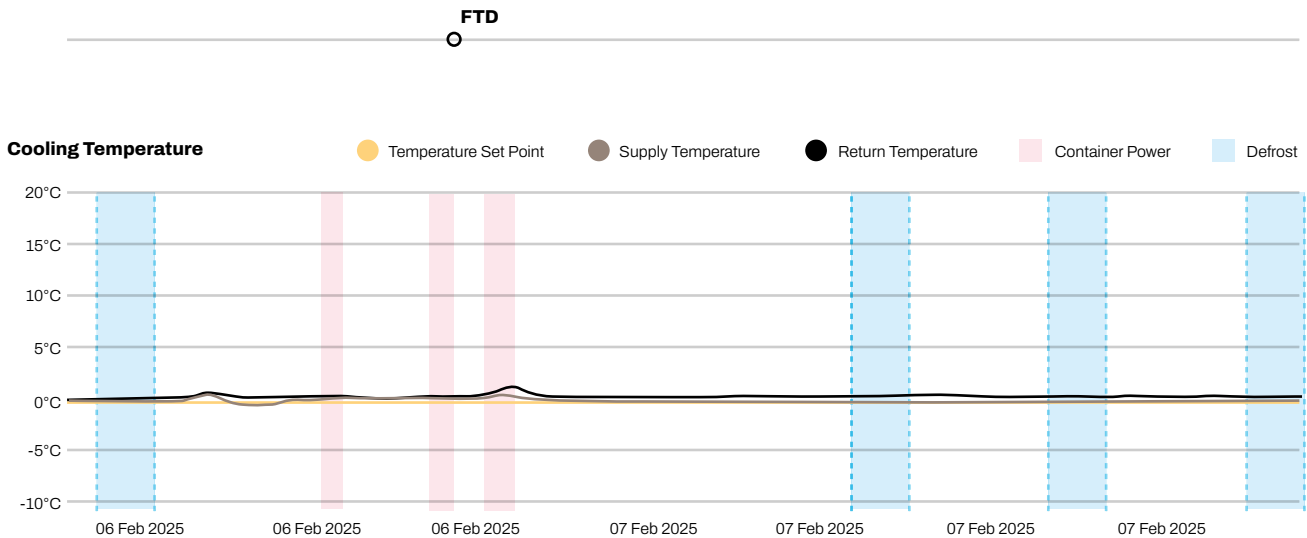
## **3.2 HOW CAN I TRACK OFF-POWER PERIODS?**

Off-power periods can be identified on the graphs. You can quickly notice off-power periods, their duration, and timestamps from the log.

## **3.3 WHY IS THERE NO DATA AVAILABLE? IS THE POWER OFF?**

A lack of data could indicate a power-off situation. If the gap is longer than one hour, it can be identified by looking at the gaps on temperature graph lines. If the temperature after the data gap is like the last recorded value, it can be assumed that the cargo temperature was maintained. If there is a deviation followed by a quick pull-down, it also suggests no significant change in cargo temperature. Cargo weight plays a crucial role in maintaining temperature inside a reefer container when there is no active cooling.

## Equipment Moves



Power-off events can occur for various reasons such as a change of transport mode, internal gate moves, gate events, or an emergency shutdown of the reefer machinery due to malfunction. Additionally, the unit may be out of range of cellular or satellite networks, which can happen during the main leg of transit. Once the container reconnects to the network signal at the first point of discharge (POD), the data from the ocean transit will be retroactively uploaded to the myMSC MSC iReefer section.

On rare occasions, the MSC iReefer device might stop transmitting data due to a malfunction, even if the reefer container is switched on and functioning as expected. If there is a sudden lack of data and the container is within cellular network range, please contact your local MSC agency. If access to the data cannot be granted, we will make sure to provide it through alternative methods.

### 3.4 HOW CAN I ASSOCIATE OFF-POWER PERIODS WITH SHIPMENT EVENTS?

Events occurring during off-power periods can be reviewed in the data log table. Customers have access to these events associated with off-power periods.

### 3.5 WILL THE OFF-POWER DATA BE INCLUDED IN THE DATA REPORT I CAN DOWNLOAD?

Yes, power status is available in the downloaded Excel/ PDF reports for each timestamp.

### 3.6 COULD YOU PLEASE EXPLAIN WHY THE CURRENT DATA IS NOT AVAILABLE AND THE LATEST INFORMATION IS FROM A FEW DAYS AGO?

This means the unit is currently outside of range of cellular or satellite networks. Typically, the connection to a cellular network is established several miles before reaching the coastline.

## 4. OPERATIONAL PROCESSES

### 4.1 WHAT IS THE TYPICAL SHIPPING CYCLE OF A CONTAINER?

A unit typically moves from an empty container depot to the shipper, to be stuffed with cargo. From the customer's premises, the full unit is transported to a container terminal. Once gated into the terminal, it is loaded onto an ocean-going or feeder vessel. Upon arrival at its Port of Destination (POD), the unit is unloaded from the vessel into the container yard. Subsequently, the unit gates out of the terminal and is transported to the consignee, where the cargo reaches its final destination. After this, the reefer is moved to the next empty depot.

## 4.2 WHAT DOES “LOADED” MEAN?

The container is loaded onto a vessel, which can be either the main transport leg or a feeder vessel. This process includes an Off-Power procedure.

## 4.3 WHAT DOES “DISCHARGED” MEAN?

The container is unloaded from either an ocean-going or feeder vessel, including Off-Power.

## 4.4 WHAT DOES “GATED IN” MEAN?

The container entered the terminal gate. The unit was transferred from the truck or train into the container yard, which includes an off-power phase.

## 4.5 WHAT DOES “GATED OUT” MEAN?

The container exits the container terminal. This process involves an Off-Power phase.

## 4.6 WHY DO INTERNAL GATE MOVES HAPPEN DURING MY TRANSPORTATION?

Internal gate moves may take place when customs are inspecting containers or if the terminal needs to relocate containers from one stack to another. Additionally, to facilitate ship loading operations, containers will be positioned alongside the ship. Internal gate moves necessitate a temporary power-off and are standard procedure.

## 4.7 WHY IS MY CONTAINER IN AN UNEXPECTED LOCATION DURING TRANSPORTATION?

This could be because the vessel carrying the reefer is delayed, the container did not reach the terminal before the gate closing time or the reefer was discharged for repairs.

# 5. TECHNICAL REEFER DATA & FUNCTIONS

## 5.1 WHAT IS THE SUPPLY AIR TEMPERATURE?

Supply air temperature is the temperature of the cooled air blown into the container to maintain desired cargo conditions. If the set point is warmer than -10 °C (14°F), supply air is controlled within 0.25 degrees of the set point.

## 5.2 WHAT IS THE RETURN AIR TEMPERATURE?

Return air temperature refers to the temperature of the air as it re-enters the refrigeration unit after circulating around the cargo space. When the set point is below -10 °C (14°F), the return air is regulated by the set point.

## 5.3 WHY ARE THERE DIFFERENCES IN SUPPLY AND RETURN AIR READINGS?

Differences between supply and return air readings in reefer containers are common due to several factors:

- **Heat absorption:** Air warms as it circulates, absorbing heat from cargo and container walls.
- **Cargo load:** Tightly packed cargo can restrict airflow, causing uneven cooling.
- **External conditions:** Weather affects container insulation efficiency.

Return air temperatures typically range from 0.5°C to 3°C (32.9°F to 37.4°F) higher than supply air due to absorbed heat.

## 5.4 WHAT IS THE TEMPERATURE INSIDE THE CONTAINER?

The actual temperature may vary from the set point due to factors such as ambient temperatures, respiring cargo, and other variables. For further details, please refer to the questions “What is supply air temperature?” and “What is return air temperature?”.

## 5.5 WHAT IS THE TEMPERATURE OF MY CARGO?

A small difference between the supply and return air readings usually indicates that the cargo is at the set point. However, there

are several reasons why the cargo inside the container might be colder or warmer than the set point. These reasons include respiring cargo, hot-stuffing, varying ambient temperatures, and blocked airflow.

## **5.6 WHAT IS “DEFROST” AND WHY IS THE TEMPERATURE OF MY CARGO RISING?**

Setting point temperatures at 5 °C (41 °F) or below will result in the icing of the evaporator coil, as circulating air deposits moisture on the cold evaporator through condensation. As ice accumulates, it reduces airflow over the evaporator coil. The refrigeration unit is equipped with sensors that determine when to initiate a defrost cycle. Alternatively, fixed defrost intervals can be programmed into the controller. During defrost cycles, the evaporator motors are turned off.

During this phase, the coil is cleared of ice using heat. This heat does not enter the container because the evaporator motors are not operating. Nevertheless, since the return air sensor is situated just above the evaporator, it will register relatively high temperatures for brief periods. This is entirely normal.

## **5.7 WHAT IS MALFUNCTION AND WHY IS THE CARGO TEMPERATURE GOING UP?**

\* Our operations teams and vessel crew are monitoring your container and will act as soon as possible.

Malfunction indicates that one of the Reefer container components may not be working as expected. This can lead to a temporary shutdown of the reefer and a subsequent lack of temperature control. In high or low ambient temperatures and with potential cargo respiration, the temperature inside the container may differ from the set point.

## **5.8 WHAT CAUSES THE TEMPERATURE TO BE ABOVE THE SET POINT AT THE START OF TRANSPORTATION?**

If the cargo is not loaded into the container fully pre-cooled at the set point temperature, it is normal for the temperature to be out of range during the first few hours. In addition, if the reefer is not on power – e.g. trucked from warehouse to port without a gen-set, the temperature can move out of range.

## **5.9 WILL I BE ABLE TO USE MSC iREEFER SOLUTION FOR COLD TREATMENT?**

With MSC iReefer Pro we also offer visibility on the temperature recorded by the USDA probes for Cold Treatment.

Contact us

[msc.com/ireefer](https://www.msc.com/ireefer)

