



Comparison Trial of Containers With and Without B-ETL



Product: Oleochemicals

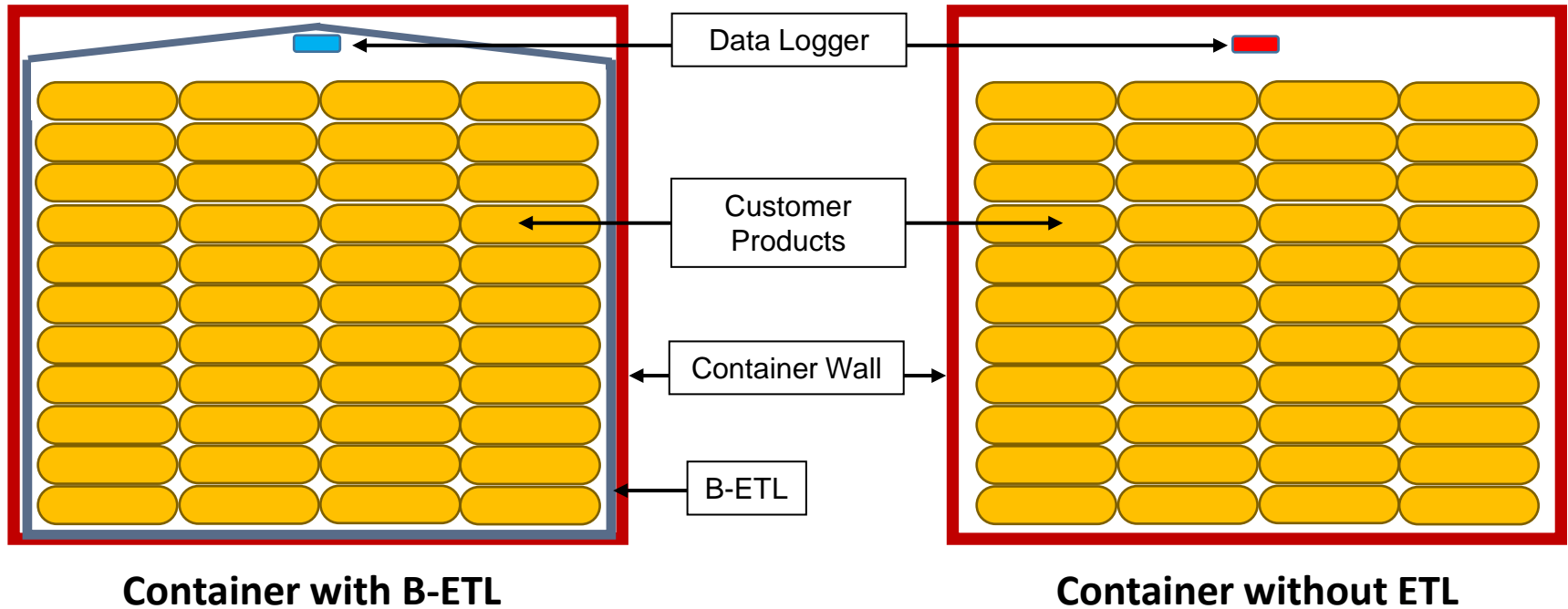
From: Port Klang (Malaysia)

Destination: Ho Chi Minh (Vietnam)

Date: 20 Sep – 18 Oct 2018



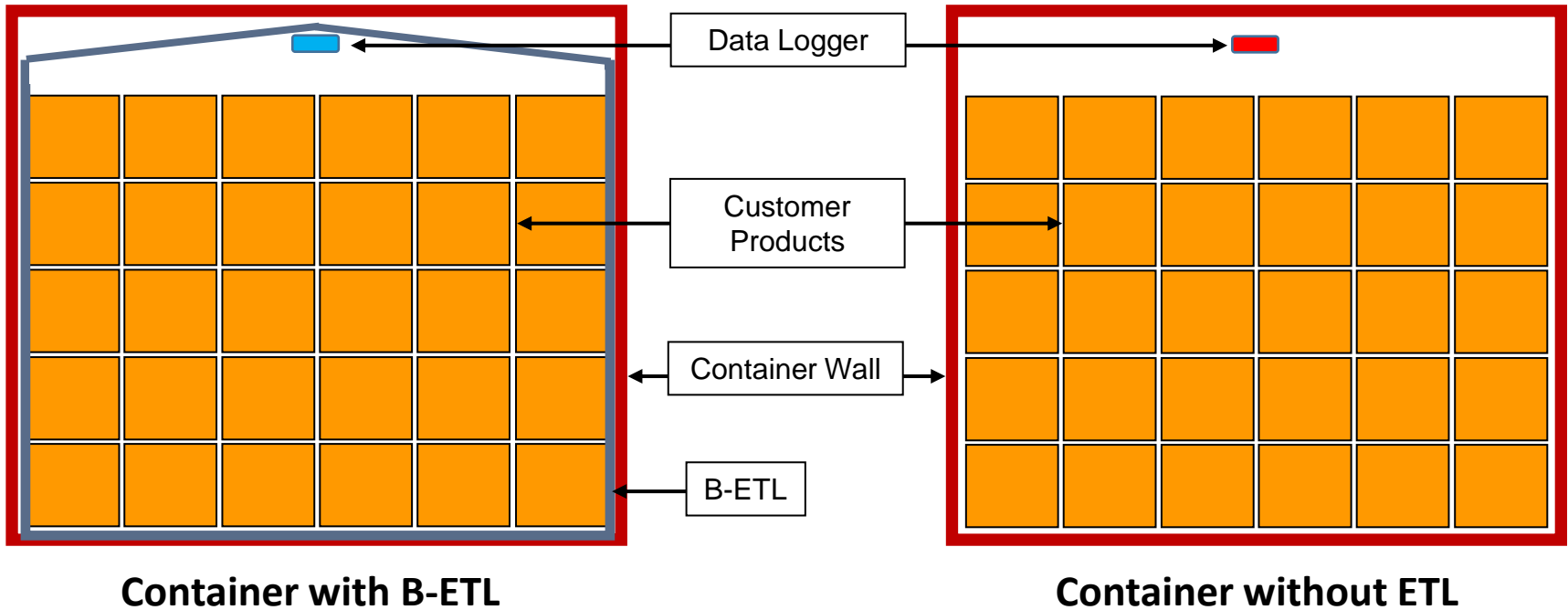
Location of Temperature/RH Data Loggers



Containers with and without B-ETL were each loaded with bags filled with oleochemicals and the temperature/relative humidity (RH) data loggers were placed at the top area inside the containers. Both containers were sent side by side to the same destination.



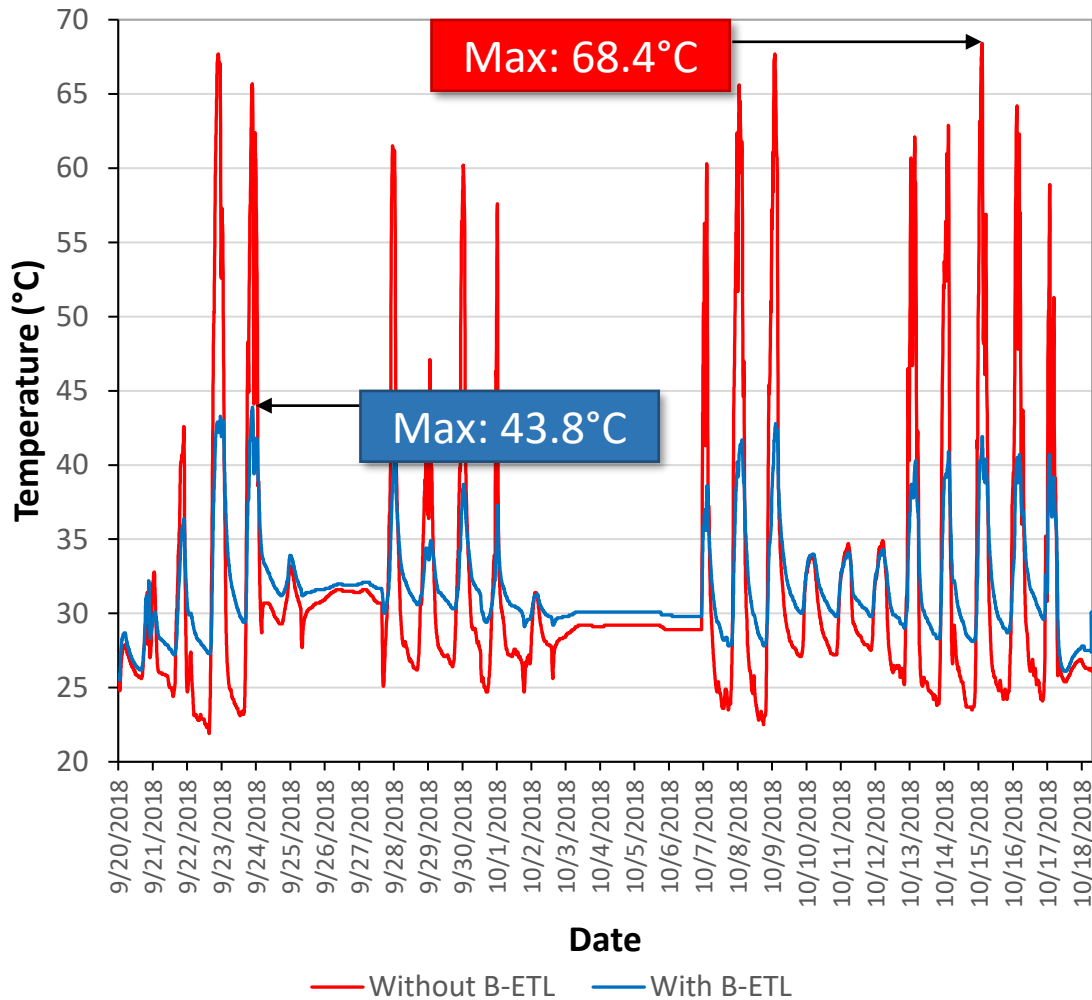
Location of Temperature/RH Data Loggers



Containers with and without B-ETL were each loaded with bags filled with oleochemicals and the temperature/relative humidity (RH) data loggers were placed at the top area inside the containers. Both containers were sent side by side to the same destination.



Comparison of Temperatures In Containers With & Without B-ETL



Conclusion (Temperature)

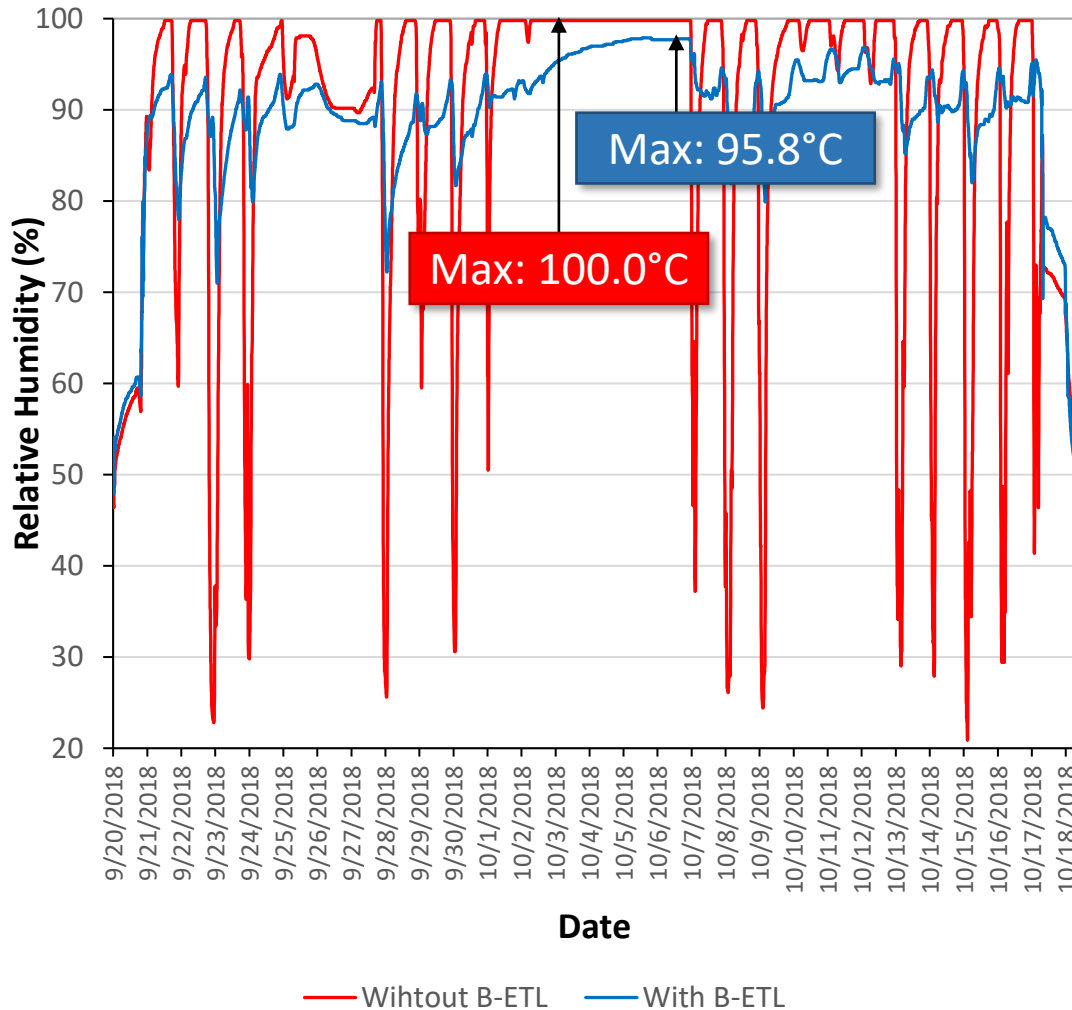
The use of B-ETL is able to effectively reduce temperature spikes or fluctuations inside the container by means of high reflective enclosed air spaces.

The maximum temperature for container without B-ETL is 68.4°C whereas container with B-ETL is only 43.8°C.

The product melting point given is 47°C. Therefore, the product placed in the container with B-ETL will not face melting problem.



Comparison of Relative Humidity In Containers With & Without B-ETL



Conclusion (Relative Humidity)

The use of B-ETL is able to prevent moisture condensation to occur inside the container by allowing water vapour to transport through the B-ETL layer, but blocks water droplets from flowing through it.

The maximum relative humidity for container without B-ETL is 100.0°C for almost everyday whereas container with B-ETL is 95.8°C.

Therefore, the product placed in the container with B-ETL will not face bag wet problem due to water condensation.



Water Condensation at the Container Ceiling



With B-ETL



Without B-ETL

A container may contain high moisture content depending on the stuffing location, weather condition, product type, etc. In such cases, water condensation at the container ceiling is inevitable.

With B-ETL, moisture is allowed to flow through the liner and prevent water droplets to flow through it, hence keeping the goods dry throughout the shipment.

Without B-ETL, the condensed water will drip down directly onto the goods and create unnecessary damages.