

Temperature Indicators for the Food Industry

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News Release

Timestrip® Seafood Indicators Launched for Reduced Oxygen Packaging Environment

February 13th, 2018 - Cambridge, UK – Timestrip® – a leading developer of ‘smart indicator’ technology – has introduced a new product specifically to protect seafood packaged in reduced oxygen environments. Timestrip Seafood will detect breaches in temperature during processing and transport, and is especially valuable with products such as crab meat and scallops, which are packaged in a reduced oxygen environment.

The indicators will provide a reliable indication when the food is stored above 37°F (3°C) – conditions in which they may develop *Clostridium botulinum* (C. bot) bacteria, responsible for food-borne botulism.

Key advantages of Timestrip Seafood are the lack of special requirements for transport or storage prior to activation, and their very long shelf-life. In addition, they are low cost and simple to use.

As most seafood processing is performed in a wet environment, Timestrip has developed a special, upgraded adhesive for the self-adhesive indicators used in seafood applications. After consulting with the FDA, the company optimized the labeling on the front of the Timestrip Seafood indicator to make it very clear to processors when a breach event had occurred and when the product should be discarded.

Timestrip is seeing strong demand for Timestrip Seafood from scallop, crab and similar sectors. An early customer is South Bend Products in Washington state, who are using the product on crab meat that is packaged in a reduced oxygen environment.

Timestrip has carried out extensive quality assurance checks to ensure that all FDA requirements are met for products used in connection with C. bot.

“We are delighted to have introduced this product ahead of Seafood Expo”, said Timestrip CEO Reuben Isbitsky. “It will make an important contribution to controlling C. bot borne infection in many seafood lines.”

Timestrip has activation tools available to automate the activation, conditioning and application process for the indicators, which are available in two formats: Singles in packs of 100, or on rolls of 4000 units for ease of use by processors.

About Timestrip

Timestrip® is an agile technology business that designs and manufactures time and temperature indicators. The company works in partnership with global brands, leading OEMs and product designers. Timestrip Enabled™ products drive changes in supply chain standard operating procedures and consumer behavior, which in turn leads to greater product safety, product authenticity, regulatory compliance and reduced wastage. Products incorporating Timestrip indicators have a built-in value-added proposition.

Timestrip indicators are capable of monitoring time from one hour to two years, and temperatures from -20°C to 38°C. In addition to a core product range, a research and development team develops new products for bespoke applications, replacing the need for expensive and unstable electronic components.

The products are low cost, making them suitable for a wide range of monitoring applications in the food, pharmaceutical, healthcare and many other sectors. To date, Timestrip has manufactured and sold over 100 million products to customers worldwide, including 3M, Tesco, Whirlpool, Parker Hannifin, Siemens and Febreze. They are a previous winner of a UK NHS Innovations Award.

10 Things to Know About Timestrip®

- 1 Timestrip has developed innovative time and temperature indicators (TTIs) that attach to seafood products — providing a clear indication of any breach in acceptable storage or use conditions. The disposable 'smart' indicators provide peace of mind, and alert operators to the need for intervention.
- 2 Temperature and time monitoring of sensitive products such as seafood is achieved throughout the whole cold chain, from manufacturer through transport and logistics to retailer.
- 3 Timestrip seafood TTIs have been specially developed and reviewed with the FDA for the control of C. Bot in reduced oxygen environments.
- 4 When applied to temperature or time sensitive products such as seafood, customer benefits include reduced product waste, audit trail / traceability, and assistance in regulatory compliance.
- 5 Timestrip's full range of indicators are capable of monitoring time from one hour to two years, and temperatures from -4°F to 100°F (-20°C to 38°C).
- 6 TTIs are based on predictable physical processes, and are safe and recyclable. No electronics or moving parts are involved. The products are low cost, making them suitable for a wide range of monitoring applications in the food industry, pharmaceutical, healthcare and many other sectors.
- 7 Timestrip is a global company with 15 years experience of designing and manufacturing unique products. It services customers around the world, direct and through a network of specially trained distributors.
- 8 The company's own research and development team develops new products for bespoke applications. It has an IQC-approved certified manufacturing facility that conforms to ISO 13485:2016, and ISO 9001:2015.
- 9 Brand owners and retailers have a powerful new tool to ensure effective supply chain operation while meeting growing legislation. Using Timestrip added value labels, they can be confident that they are presenting their brands in the best light, creating customer satisfaction and gaining customer loyalty.
- 10 For enquiries, please email info@timestrip.com

Timestrip Solutions

What we do

Timestrip is an agile technology business that designs and manufactures time and temperature indicators.



Timestrip Enabled™ products drive changes in supply chain standard operating procedures and consumer behavior, which in turn leads to greater brand loyalty, a better rate of sale and a built-in value added proposition to products carrying our mark of innovation.

Stocked Solutions

Innovation remains a core strand of our approach to solution development and the practical application of our patented, low-cost smart label indicators.

Custom Solutions

Our customization capabilities open up endless possibilities for product design integration to create solutions where our fail safe indicators replace the need for expensive and unstable electronic components.

We have the capability to print batch numbers or serial numbers onto individual indicators, to make time and temperature monitoring an integral part of Standard Operating Procedures.

How it Works

Our indicators are activated by applying finger pressure to a blister filled with liquid dye. The temperature indicators show you the product is "ON" after activation. Once a temperature threshold is breached, the indicator window fills with dye, showing the cumulative time the indicator was exposed to high temperatures.



Time indicators show you the amount of time since activation. After finger activation, the indicator window continually fills with dye to show you elapsed time.

Use in:

- Airline Catering
- Food Retailing
- Fresh Produce
- Fresh Seafood
- Food Retailing
- Home Delivery
- Hub & Spoke
- Restaurants
- School Meals

Temperature Monitoring

Inert until activated, irreversible threshold indicators.

Timestrip® PLUS

Monitoring ascending temperatures from -20°C to 38°C.

Timestrip® PLUS Duo

Monitoring 10°C and 34°C simultaneously.

Timestrip® Complete Card

2-8°C cold chain monitoring on one card.

Timestrip® Blood Temp

Monitoring 6°C & 10°C.

Timestrip® Food Temp

3°C, 5°C, 8°C & 10°C indicators for the food industry.

Time Monitoring

Activate to see time passing with a Timestrip®. Our range of 9 indicators include 15 time lapse markers.

Short Time Indicators

from 1 Hour to 7 Day time monitoring.

Time Indicators

from 1 to 24 Months, our standard line of time indicators are used in medical devices, for product replacement cycles, with consumables, for appointment reminders, cosmetics, industrial filters and on promotional materials.

Custom indicators can be created with a unique monitoring time and your own branding.

Timestrip in the Food Industry

Seafood companies selling to the US market are mandated to use FDA approved cold chain monitoring tools to ensure that spoiled and potentially harmful seafood aren't consumed.

For this purpose, we developed our Timestrip® Seafood 3°C / 37°F indicator, which monitors the passing of time and temperature breaches.

For example, if oysters are not kept chilled, they can become infected with highly toxic C-botulism organisms. Our Timestrip® Seafood gives clear unambiguous visual data as to whether there's been a temperature breach and how long it lasted.

FDA Guidance: Reduced Oxygen Packaging – C. botulinum

- Temperature maintained below 38°F (3.3°C) from packing to consumption
- Time-Temperature Indicator on smallest unit of packaging
- TTI validated fit for purpose
- TTI verified that it is functional at the time of use
- Colour change alert of unsafe time and temperature exposure has occurred that may result in C.botulinum toxin formation Irreversible color change alert TTI receipt, storage, and application and activation should be identified as CCPs

For our seafood clients exporting to the US, use of our indicators helps seafood clients comply with FDA import regulations allowing their products to be fast-tracked through customs and make their brand more trustworthy.

For some of our customers, the concern is also to do with cost. Timestrip TTIs alert staff when food products need to be disposed, leading to direct savings around wastage.



Timestrip in Action

Amtrak saves money with Timestrip

Before Amtrak started using Timestrip Time Temperature Indicators (TTI), the company's procedure had been to remove all food items from the trains when they pulled into the station for the evening. Amtrak contacted Timestrip because it had the best prices on an 8°C product and were inert prior to activation. They only needed a 4-hour 8°C TTI, so Timestrip created this product specifically with them in mind, which is now the Timestrip® Food 8°C / 46°F.

An unexpected outcome was that by creating a smaller time window, Timestrip were able to help the company reduce costs further.

The procedure Amtrak now operates involves the last F&B crew placing numerous 8°C labels on the tops of yogurt containers (which have an aluminum cover) before leaving the train in the evening. The following day, the first crew must check to make sure that none of the yogurts in the various refrigeration units have had a breach of temperature. Because of the successful use of Timestrip 8°C / 46°F TTI on Amtrak's West Coast line, further use of the product will be rolled out elsewhere on the national network.

Timothy Corbett - Amtrak's manager of Special Projects MD:

This has saved the Los Angeles hub over \$337,000 in one year. Without Timestrip, this would not have been possible because the FDA previously would not allow them to keep the refrigerated food items onboard.

FDA compliance with Ferme Marine de Mahebourg

Ferme Marine de Mahebourg was the first seafood exporter to the US that used Timestrip labels after they were designed for FDA compliance, a crucial requirement for the company given that half of its exports are for the US market.

Timestrip Seafood 3°C / 37°F TTI labels are specially designed for vacuum packaged products. This low oxygen environment keeps products looking fresh until receipt by the end-user. After using Timestrip, the company no longer receives negative feedback from its customers as to how the products look upon receipt.

Moreover, because there is a high risk of Clostridium botulinum toxin growth with vacuum packaging at temperatures above 4-5°C for over 4 hours, they also work as a C. bot prevention tool.

A related benefit of using an FDA compliance cold chain management tool is that the company is placed on a so-called "Green List". This means that its products are not detained at receiving US airports and are only checked for temperature.

This benefit is 100% correlated to the Timestrip® Seafood indicator being in compliance with FDA guidance and means the company's US customers get to process their received products without any delays.

Tommy Sawmy MD:

Timestrip TTIs not only allowed for access to the US domestic seafood market, but also led to more sales.

Timestrip in Action continued

Island Creek Oyster Shipping increased consumer trust

After market analysis and comparison pilot testing, Island Creek chose to use the Timestrip® 10°C TTI to show active temperature monitoring throughout the cold chain.

The TTI is activated and attached to the base of the box in-between the two frozen gel packs, prior to the seafood being packed and the box sealed for shipment. Once delivered customers have a simple mechanism to visually alert them to a temperature breach. This in turn allows the customer service teams to advise as to whether they should discard the product or not. The Timestrip® indicator also places additional accountability in the hands of FEDEX to fulfill service level agreements.

With the adoption of a Timestrip® TTI as part of their seafood safety standards regime, Island Creek not only comply with regulations, they build consumer trust and generate loyalty through a demonstrable commitment to direct delivery product quality and freshness.

Emily Weedon from Island Creek:

We are shipping thousands of individual consignments every year and with a Timestrip® Plus TTI in every box we know that our oysters had a safe trip!

Superior Foods' customized monitoring with Timestrip

Timestrip was able to create a custom product to suit the specifications of Superior Foods. Once activated, Signal Case™ indicators provide a clear visual indication if the threshold temperature of 8°C/46°F has been exceeded for the duration of two hours and four hours or more.

The design of the adhesive indicator means that it is easily applied to the containers of the salmon being shipped, and the information can be determined with a glance. The graphics feature the Signal Case™ logo, reminding customers that Superior Foods will continue to uphold their promise of freshness and quality through collaboration towards a dynamic future.

Timestrip assured delivery by From Home With Love

From Home With Love, which only launched in December 2013, is already providing hundreds of home cooks across the US with the validated packaging necessary to send home cooked frozen meals to loved ones away at college, on work assignment or on military service.

They are including Timestrip® Food indicators in their shipping kits so that the recipients can be assured that their lovingly prepared meals never went above 40°F – as recommended by the USDA – while in transit.

James Delaney, FHWL Founder and CEO:

Time-Temperature Indicators specific to the food industry are long overdue and the opportunity for us to offer existing clients and prospective customers Timestrip's advanced temperature monitoring indicator will benefit our company's overall efforts as we continue to enhance our line of Reusable Insulated Container Kits.

Timestrip in Action continued

Food distribution with E.A. Sween

Family-owned since 1955, E.A. Sween Company proudly makes over 70 million sandwiches a year, distributing them all over the country through Wholesale, Direct Store Delivery and Combined Distribution Centers. Their Deli Express brand needs to ensure their sandwiches arrive at stores without being exposed to high temperatures. Deli Express uses Timestrip indicators that monitor temperature breaches above 41°F / 5°C applied to shipments from their distribution centers so the stores can be assured the sandwiches are safe to accept and distribute.

Inbound shipment acceptance with Schnuck Markets

Schnuck Markets, Inc. has been serving customers quality food for more than seven decades. Founded in north St. Louis, the family-owned grocery company has grown to include nearly 100 stores in five states. Instead of guessing that food has arrived at their St Louis area markets in a temperature controlled environment, they needed a solution to assure the quality of inbound deliveries. Schnuck Markets has required a number of their vendors to use Timestrip Seafood 3°C and 5°C depending on the particular goods on all inbound shipments. With one glance of the indicator, their employees can see that the food shipment is ready to be put in the store.

Timestrip helped Choice Lunch serve quality school meals

Choice Lunch is committed to providing school children with nutritionally balanced healthy lunches, hand cooked and made to order each day. Timestrip® indicators are applied to the inside of each cool box. They have a simple, highly accurate and clearly visible read out showing how long the contents have been above the critical 41°F / 5°C chilled threshold.

Choice Lunch, along with the State Health Inspectors, love the tamper-proof integrity and the unambiguous display of Timestrip® indicators to prevent the consumption of food exposed to temperatures above 41°F / 5°C for more than 2 hours.

With a guarantee that lunches are delivered and served at the right temperature, parents with children at a vulnerable age get the peace of mind they deserve, from a company they know is 100% committed to providing safe, healthy food for hungry school kids.

