

ECO Meal RAIN RFID Label

Stora Enso, Intelligent Packaging



Sustainable RAIN RFID label for microwave safe use

Each year, 1.3 billion tons of food is wasted worldwide, according to the United Nations Food and Agriculture Organization. With RFID technology, it is possible to accurately keep track of inventory, optimize processes and production, and track expiry dates to significantly reduce food waste. Unmanned retail concepts are gaining popularity and increasingly rely on RFID as the item-level identification technology. However, food articles with traditional RFID tags can not be safely microwave heated.

Stora Enso's ECO Meal UCODE 8 is the world's first sustainable RFID tag that can be used in microwaveable food packages. When properly placed on the food package, ECO Meal can be exposed to microwave energy. The patented antenna design concept enables ECO Meal to be used, with certain limitations, in microwaveable food packages without excessive amount of protective metallic or polymer layers. ECO Meal is specifically designed for item-level tagging and tracking of ready-made meals. Due to its excellent read performance, ECO Meal enables retailers to reliably identify and manage their items in various unmanned retail and retail applications, even when the products are stacked. With a fibre-based substrate, ECO Meal is the environmentally friendly choice with a natural anti-tamper feature.



Patent pending



ECO RFID
Tag Technology
by Stora Enso



Applications



Food
Industry



Retail



Unmanned
retail

Key features of ECO Meal

Perfect for ready-made meals

ECO Meal provides a true end-to-end solution for the food industry. The label's compact form factor is the perfect match for ready-made meal and food packages. ECO Meal is safe and easy to place directly on the fibre-based or plastic package and it ensures reliable reading.

Managing food waste

According to studies, RFID can reduce food waste by up to 20% by accurately aligning inventory with variable demand, improving processes, optimizing production, increasing visibility of expiry dates and facilitating food donations. With ECO Meal your unmanned retail solution can provide automatic scanning of the product tags, identifying units that are approaching their 'best by' or 'use by' date, and crediting the buyer with discounts on those items at the point of purchase.

Safe and Reliable solution

ECO Meal label does not need to be removed from the food package prior heating in a microwave. ECO Meal eliminates the risk of sparking, or fire, and excessive heating when used as recommended. This RAIN RFID label has been tested in TÜV Rheinland® laboratory for microwave safety when attached to meal package.

ECO Meal uses NXP's UCODE 8 IC. The IC integrates Self Adjust, a feature that maximizes the product performance across a broad range of operating frequencies, dialects, and applications. ECO Meal is compliant with current frequency regulations.

ECO Meal labels pass industry standard tests for temperature and humidity (IEC 60068-2-67), temperature cycling (JESD22-A104-B) as well as tag bending tests. These comprehensive tests ensure ECO Meal performs at all stages of the products life cycle and can safely be used to track items from source to the point of sale.

Stora Enso's
ECO Meal
UHF label
in natural
size.



Technical details

Sales Code

500108

IC & electrical details

NXP's UCODE 8m
96 bit EPC, 32 bit user
860 - 960 MHz
EPC G2v2, ISO 18 000-63

Size

97 x 13 mm / 3.82 x 0.51 in

Web width

100 mm

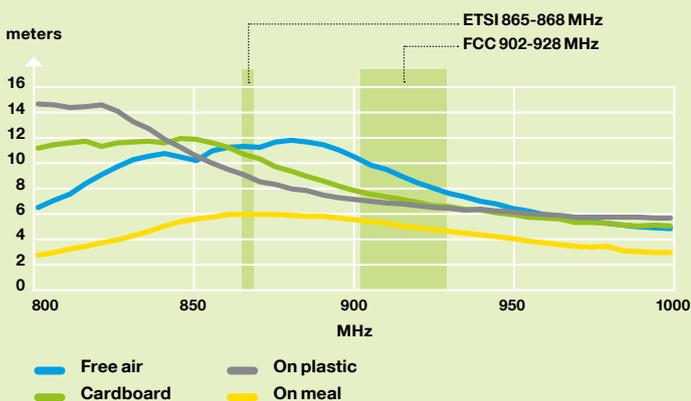
Operating temperature

-20 °C...+80 °C / -4 °F...+176 °F

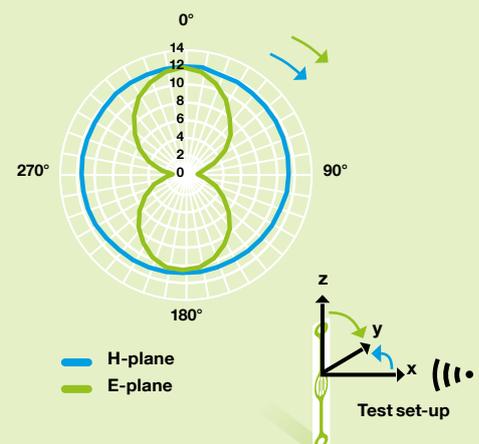
Delivery details

76 mm / 3 in core
5 000 pcs/reel, 20 000 pcs/box
1 year shelf life in +20 °C / 68 °F, 50 % RH

Theoretical read range forward



Orientation sensitivity



Contact us for more information:

www.storaenso.com/intelligentpackaging

The performance of the product should always be tested in the actual application conditions. Our recommendations are based on our most current knowledge and experience and the pictures and illustrations presented in this document are for illustration purposes only. As our products are used in conditions beyond our control, we cannot assume any liability for damage caused through their use. Stora Enso reserves the right to change its products and services at any time without notice.



THE RENEWABLE MATERIALS COMPANY