

# REINVENTING

## PACKAGED FOOD

Consumers are demanding healthier, more nutritious packaged food without excess salt and artificial additives.

Only one food processing technology can deliver it: Microwave Assisted Thermal Sterilization (MATS™).

### Microwave-processed foods:

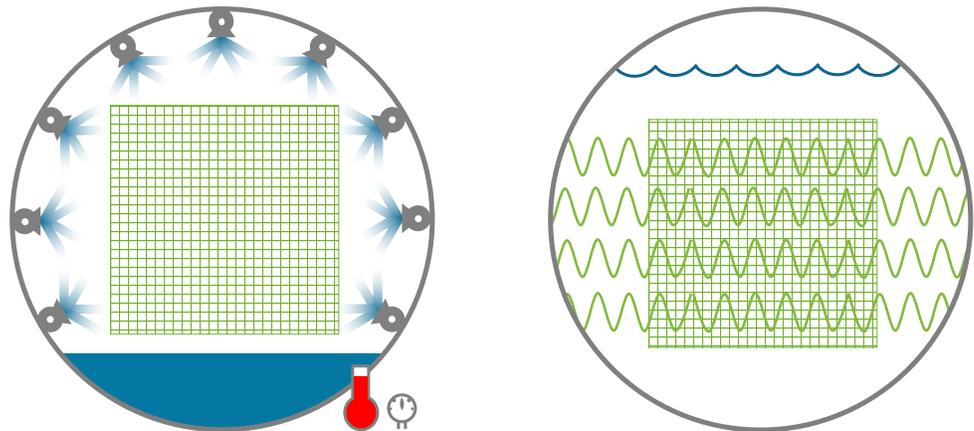
- More nutritious
- Additive-free
- Greater variety
- Freshly prepared texture and taste
- More natural

Available exclusively through 915 Labs, MATS is radically different than conventional food processing, which strips away the flavor and nutrients in food. By minimizing exposure to high heat, microwave processing preserves the natural flavor, texture and nutrients in food – and eliminates the need for unnatural additives and excess salt.

This highly innovative and disruptive technology will transform the packaged food industry by enabling food producers to safely package fresh, nutritious, clean-label food for the shelf.

### HOW MATS WORKS

The patented microwave processing technology is a healthier alternative to conventional food processing, which exposes foods to high heat for long periods of time.



MATS is the first in-package microwave sterilization technique accepted by the US Food and Drug Administration (FDA).

In conventional processing (also called retort), packaged foods are placed in pressurized cookers at high temperatures for up to an hour. To mask the damage caused by this prolonged exposure to high heat, salt, flavor, texture and color enhancers, and other artificial ingredients must be added.

MATS sterilizes food – eliminating all pathogens and spoilage microorganisms – in a matter of minutes by immersing packaged food in pressurized hot water and simultaneously heating it with microwaves at a frequency of 915 megahertz (MHz). This shortened heating time preserves the nutrients, color, texture and flavor of foods – while providing a shelf life equivalent to conventionally processed foods, or 12 months.

## MICROWAVE PASTEURIZATION

Pasteurization can also be performed on the MATS system. By operating at varied temperatures and heating times, MATS can process foods and beverages from light pasteurization to sterilization. For pasteurization, foods and beverages are heated at 915 MHz to a temperature of 70-90°C for 2-10 minutes, effectively eliminating viral and bacterial pathogens. The result is ultra-convenient, clean-label, restaurant-quality, ready-to-eat foods and beverages with a chilled shelf life of up to 4 weeks.

Microwave pasteurization can also be used as a safety intervention step to improve the safety of prepared, ready-to-eat and frozen foods and batch ingredients.

## SYSTEMS & SERVICES

915 Labs systems include:

**MATS-B pilot-scale system**, which processes 60 packages per hour\* for recipe and product development, testing, research and test market launches.

**MATS-30 Commercial Production System**, which processes 30 packages per minute.\*

\* Based on 8.5 oz square tray.  
Rate will vary based on size of tray or pouch.



Larger capacity production systems with a throughput between 50 and 225 units per minute are available by custom design.

In 2018, 915 Labs plans to launch MAPS-only pasteurization systems and MATS-100 commercial-scale production systems capable of processing 100 units per minute.

## WRAPAROUND SERVICES

To help food companies deliver the highest quality food product to their customers, 915 Labs offers additional services. Our suite of wraparound services includes:

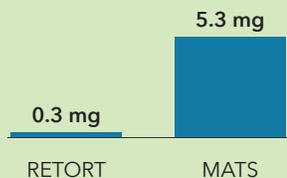
**Product Development**, including consultation and support services on formula development and process optimization, pilot- and bench-scale sample production, MATS and MAPS process and product development training, process modeling, packaging development and model food development and analytical testing for dielectric properties and heating pattern and cold spot analysis.

**Thermal Process Validation**, through a partnership with Covance Food Solutions (formerly the National Food Lab). Consultation and support or turnkey FDA validation filing services available.

**Packaging Solutions**, through partnerships with leading packaging suppliers, including our foundational partner Printpack. The program integrates the best available technology, materials, expertise and resources and offers a range of stock and customized rigid trays and pouches optimized for MATS/MAPS.

Microwave processing is a healthier way to sterilize and pasteurize foods and beverages.

Healthy Omega 3s



A recent study demonstrated that a MATS-processed salmon dish retains up to 5.3 mg of heart-healthy Omega 3s, whereas today's retort-processed salmon would retain a negligible .3 mg.

Learn more at:

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