

Measure. Monitor. Document. - Controlling *Listeria monocytogenes* Contamination Through Effective Time/Temperature Process Controls

On January 13, 2017, the FDA released updated draft guidance for the food industry detailing its recommendations for controlling *Listeria monocytogenes* ("*Listeria*") contamination in ready-to-eat ("RTE") food products. The draft guidance provides food processing facilities a framework for minimizing *Listeria* contamination in their products throughout the production process, including transportation, storage, and all stages of production line handling.

A major component of the draft guidance is the monitoring and recording of time/temperature data. In fact, the guidance goes so far as to recommend "continuous monitoring and recording of [time/temperature] parameters" whenever practicable.¹ Record-keeping is also addressed, with the recommendation that food manufacturers "establish and maintain records" of all process control parameters including time/temperature, validation of time/temperature controls, and "monitoring of listericidal process control parameters."² Lastly, the guidance encourages routine review of process control records to facilitate timely corrective actions.³

The guidance provides significant insight into the future of food safety. With the increased emphasis on record maintenance and review, food processors face the challenge of implementing effective, efficient, and economically feasible solutions that ensure the safety of their products and compliance with regulatory requirements. Fortunately, with appropriate use of technology and the right measurement equipment partner, the challenge becomes much less daunting.

TEGAM understands the challenges faced by the food industry. For over 20 years we have served the food industry with our line of thermometers, temperature probes, and temperature calibrators. And with the release of TEGAM's newest thermometry products, time/temperature documentation, record maintenance, and data review have never been easier.

The TEGAM 931A and 932A Data Thermometers bring together the latest advancements in temperature measurement with cutting-edge communication and cloud storage solutions to create a comprehensive but cost-effective time/temperature solution. Used as a stand-alone thermometer, the 930 Series Data Thermometers

¹ U.S. Department of Health and Human Services, Food and Drug Administration, Center for Food Safety and Applied Nutrition, Docket Number FDA-2007-D-0494, *Control of Listeria monocytogenes in Ready-To-Eat Foods: Guidance for Industry Draft Guidance*, § X.B.1. (2017). Available online at http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm073110.htm?source=govdelivery&utm_medium=email&utm_source=govdelivery.

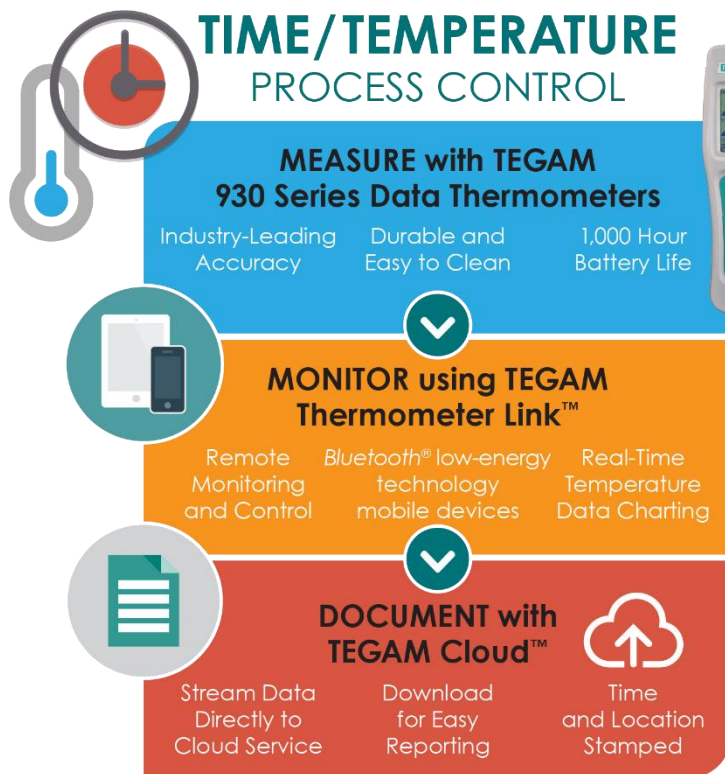
² *Id.* at § X.C.

³ *Id.*

provide industry-leading accuracy and internal storage for manual or automatic data collection, all packaged in an easy-to-clean and durable case. The 930 Series Data Thermometers also have a 1000-hour battery life on three AA alkaline batteries, making continuous temperature measurement possible while still providing the flexibility of a handheld solution.

But to fully implement the time/temperature controls envisioned by the draft guidance, it's important to have an efficient means to document temperature measurements with identifying time and location data. TEGAM's Thermometer Link™ mobile application and TEGAM Cloud™ data storage service combine to do just that.

Thermometer Link allows technicians and quality personnel to connect their TEGAM Data Thermometer to any *Bluetooth*® low-energy wireless compatible Android™ or Apple mobile device.⁴ It provides full two-way control of the thermometer, allowing users to configure the thermometer and monitor temperature measurements remotely.



To round out the process, time and location-stamped temperature data can be streamed directly to the TEGAM Cloud for easy storage, review, and downloading, creating an auditable repository of your temperature measurement data. To see how it works with real temperature measurement data, go to www.tegamcloud.com and login to the default demonstration account using the pre-filled login information.

⁴ TEGAM Cloud™ and Thermometer Link™ are trademarks of TEGAM, Inc. The *Bluetooth*® word, mark, and logos are registered trademarks owned by Bluetooth SIG, Inc. and use of such marks by TEGAM, Inc. is under license. Android™ is a trademark of Google Inc. Apple is a trademark of Apple Inc.

Whether continually monitoring your production line, or quality checking critical control points throughout the production process, TEGAM is the technology partner you can trust.

See the TEGAM Data Thermometers and food safety temperature measurement solutions and download data sheets at www.tegam.com

2019 UPDATE: TEGAM has enhanced the technology of the 93X Series thermometers. Click to view the [931B](#) or [932B](#).