

## ShockWatch<sup>®</sup> WarmMark<sup>®2</sup> Ascending Time-Temperature Indicator



*Cold chain monitoring solutions that keep your supply chain on track*

WarmMark<sup>2</sup> is a best-in-class ascending time-temperature indicator which alerts users of exposure to unacceptable temperature conditions.

### Solutions to Drive Accountability in the Cold Chain

In the cold chain, an unacceptable temperature event can result in high product losses. Delays in the availability of replacement product can be damaging to a company's reputation in the marketplace. Monitoring programs that communicate to handlers the sensitivity of a shipment can help prevent unacceptable events from ever happening. WarmMark<sup>2</sup> can play a role in these programs by:

#### Ensuring cold chain accountability

Every WarmMark<sup>2</sup> carries a unique identification number. A structured monitoring program can help you pinpoint costly breaches at any stage of shipping, handling, and storage; assign accountability; and take corrective action.

#### Delivering clear results

The WarmMark<sup>2</sup> is a simple, easy to interpret indicator that allows for quick go / no-go decisions to be made when inspecting and receiving product. It is easily incorporated into standard operating procedures with minimal process change and training.

### Applications

- Pharmaceutical preparations
- Vaccines
- In vitro and in vivo diagnostics
- Biological products
- Medicinal chemicals and botanicals
- Prepared and raw refrigerated foods
- Fresh foods
- Wine
- Raw industrial materials
- Industrial chemicals
- Films
- Live animals

### Summary of Features

Feature	Benefit/Details
<b>Field activated</b>	Can be shipped & stored under most conditions
<b>Individually serialized</b>	Allows product tracking for internal handling and chain of custody
<b>Highest accuracy on the market</b>	Tested in both real world applications as well as a lab environment
<b>Available in rolls</b>	Allows for rapid application if needed
<b>Water submersion proof</b>	Moisture conditions can't stop it from working accurately
<b>Standard &amp; custom sensitivities available</b>	Complete flexibility for customer requirements

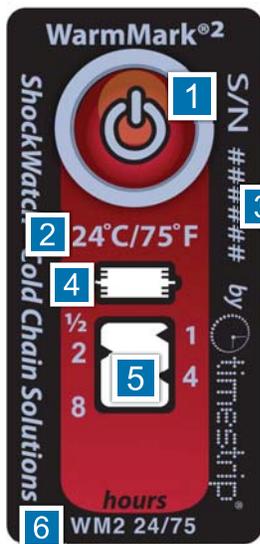
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## A Low-Cost, **Highly Accurate** Solution to Critical Cold Chain Problems

A single-use indicator, WarmMark<sup>2</sup> is specifically designed to help shippers identify and correct gaps in their temperature-controlled supply chains. The result is increased knowledge of your product's environment when the product is out of your sight and out of your control and that translates into improved product margins by:

- **Protecting product shelf life**  
Best-in-class accuracy (+/- 1°C) with a wide variety of temperature sensitivities enables WarmMark<sup>2</sup> to provide a highly visible, easy-to-read indication that your product has been handled and stored properly throughout the cold chain – allowing your customers and their end-users to determine that the product shelf-life has not been compromised by temperature breaches.
- **Ensuring validated packaging is performing**  
Validated packaging is an ideal solution when shipping the same product in the same lanes all the time, but what happens if something happens to the packaging? A corner is crushed, a small hole is made in the box, is the product still protected properly? Would an auditor find it acceptable? WarmMark<sup>2</sup> delivers an inexpensive option for added peace of mind.
- **Reducing packaging costs**  
WarmMark<sup>2</sup> indicators are a low-cost temperature monitoring solution that adds very little to overall costs. They can be applied to your existing thermal packaging to provide superior product monitoring without expensive re-engineering of the packaging. And the tags can be applied via time- and labor-saving automated methods, eliminating costly manual processes in high volume scenarios.

## Unique Features



- 1 Push "power" button to activate ("button" on back for longer monitoring times)
- 2 Temperature sensitivity
- 3 Unique identifiers
- 4 Shows "ON" to indicate the device is armed
- 5 Blue appears at exact exposure times
- 6 Part number



## Key Specifications

<b>Threshold Temperature</b>	Available between -20°C / -4°F and 38°C / 100°F
<b>Temperature Accuracy</b>	+/- 1°C / +2°F
<b>Time Accuracy</b>	+/- 15% under isothermal conditions
<b>Storage Conditions</b>	<ul style="list-style-type: none"> <li>• Store in a cool, dark place.</li> <li>• Recommended 22°C / 72°F at 20-80% RH</li> </ul>
<b>Shelf Life</b>	2.5 years from date of manufacture*

\*0°C WarmMark<sup>®2</sup> shelf life is two years from date of manufacture

See WarmMark<sup>®2</sup> data sheet for complete list of specifications.

## Learn from the Experts

ShockWatch is a global leader in the innovation and optimization of logistics and cold chain risk mitigation. In addition to providing leading-edge products and systems, ShockWatch consultants, subject matter experts and training staff partner with customers to help them:

- Ensure proper implementation and effective long-term usage of ShockWatch systems
- Optimize their investment for an improved bottom line
- Maximize understanding of conditions that affect products during transit and in operation

## Put the ShockWatch Advantage to Work for You

Whether monitoring the entire cold chain or simply the last mile, WarmMark<sup>2</sup> Ascending Temperature Indicators can help you streamline your processes, reduce costs, increase customer satisfaction, and protect your bottom line by identifying product mishandling which may negatively impact product efficacy and your company's reputation.

Learn how WarmMark<sup>2</sup> can optimize your cold chain by visiting us at [www.ShockWatch.com/WarmMark2](http://www.ShockWatch.com/WarmMark2) or contacting a ShockWatch representative at [info@shockwatch.com](mailto:info@shockwatch.com).



## A Complete Portfolio of Monitoring Devices

WarmMark<sup>2</sup> is part of a complete line of temperature monitoring devices available from ShockWatch. Below is a short comparison of additional products that may help you in your monitoring needs.

<b>Indicators</b> ColdMark <sup>®2</sup> WarmMark <sup>®2</sup>	<b>Electronic Indicators</b> TempMark <sup>® 8</sup>	<b>Recorders</b> TrekView <sup>®</sup>
Single temperature threshold devices	8 temperature alarm threshold devices	
Simple go/no-go chemical indicator	Records number & longest duration of single excursion, cumulative time out of tolerance for 8 alarm conditions	Records temperature every minute for up to three (3) years  Graphing & analysis software (FDA 21 CFR Part 11 Compliant)
Single use device	Single use device	26x use device
-20°C to 38°C	-20°C to 70°C	-30°C to 75°C
Visual color change	Liquid crystal display	Red/green LED Data access: Wireless or USB



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## About ShockWatch

As the global leader in the innovation and optimization of logistics and cold chain risk management systems, ShockWatch provides solutions that currently enable over 3000 customers and some 200 partners in 62 countries to detect mishandling that causes product damage and spoilage during transport and storage. The robust ShockWatch product portfolio includes impact, tilt, temperature, vibration, and humidity detection systems and is widely used in the energy, transportation, aerospace, defense, food, pharmaceutical, medical device, and manufacturing sectors.

Founded in 1976 and based in Dallas, Texas, ShockWatch is a subsidiary of MRI, Inc., which is also the parent of DPC and DataSpan. MRI's international client base includes two-thirds of the Fortune 100 and more than half of the Fortune 1000 companies.

For more information on ShockWatch position on RoHS, EU Directive 2002/95/EC, Amendment Commission Decision 2005/618/EC, and our certificates of compliance, please visit [www.shockwatch.com](http://www.shockwatch.com).