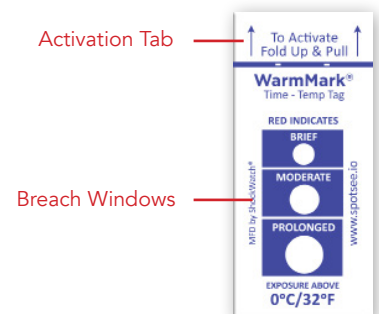


# WarmMark Temperature Indicator User Manual

## Arming & Use

1. All WarmMark breach window(s) should be white prior to arming the device.
2. Before arming, the WarmMark indicator should be placed in an environment at least 5°C (9°F) below the WarmMark's activation threshold temperature for a minimum of 30 minutes.
3. To arm the WarmMark indicator, fold up and pull out the indicator's activation tab until the tab and barrier film have been completely removed.
4. If using a WarmMark indicator with a threshold temperature below the ambient temperature, immediately place the indicator in the environment to be monitored to avoid early activation.
5. Remove the adhesive liner from the WarmMark and adhere the indicator to a clean, dry surface.  
The WarmMark should be located where it will be visible to the receiver of the monitored shipment.  
The WarmMark can be adhered directly to the product being monitored or located inside the packaging.

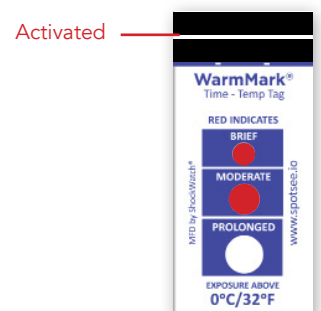


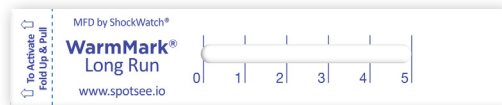
## Interpreting the WarmMark

Any sign of colour in the breach window(s) after arming, including light pink, pink, or red, is a sign of temperature excursion equal to or above the time and temperature specification.

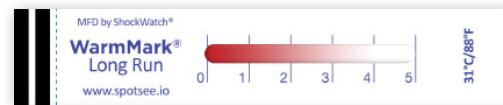
When the WarmMark is exposed to conditions above the indicator's activation temperature  $\pm 1^\circ\text{C}$  ( $\pm 2^\circ\text{F}$ ), a red dye will begin migrating through the run-out window(s).

Run out times are based on a constant temperature  $2^\circ\text{C}$  above the indicator temperature threshold. Exposure to higher temperatures will result in faster run out. Brief (Window 1) and Moderate (Window 2) time figures are for guidance, while the Prolonged (Window 3 or only window) is controlled to the time specification.





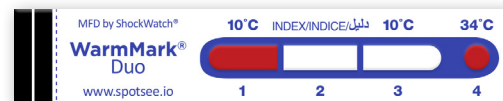
Inactive – WarmMark Long Run



Armed and Activated



Inactive – WarmMark Duo



Armed and Activated

## Run Out Times

3 Window Indicators	Brief	Moderate	Prolonged
-18°C/0°F	1 hour	3 hours	12 hours
0°C/32°F / 8°C/46°F 10°C/50°F / 20°C/68°F	2 hours	12 hours	48 hours
5°C/41°F / 25°C/77°F 30°C/86°F / 37°C/99°F	30 minutes	2 hours	8 hours

1 Window Indicators	
8°C/46°F / 25°C/77°F	8 hours
8°C/46°F	12 hours

Long Run Indicators	Line 1	Line 2	Line 3	Line 4	Line 5
10°C/50°F / 31°C/88°F	12 hours	30 hours	60 hours	110 hours	168 hours

Duo Indicators	Window 1	Window 2	Window 3	Window 4
10°C/50°F	3 days	8 days	14 days	
34°C/93°F				within 30 minutes

## Specifications

Accuracy of Temperature	±1°C/ ±2°F
Shelf Life / Storage	2 years from manufacturing date / Cool, dark place below activation temp, 35-55% RH