

## HEATmarker® VVM+ Vaccine Vial Monitors with Peak Threshold Heat Indicator

Combining traditional VVM cumulative heat indication with innovative peak temperature indication technology

As a key enabling innovation for the Controlled Temperature Chain (CTC) initiative, Zebra developed HEATmarker VVM+ specifically for monitoring heat stable vaccines. It provides healthcare workers a new level of assurance, in the same historic format as the traditional VVM.

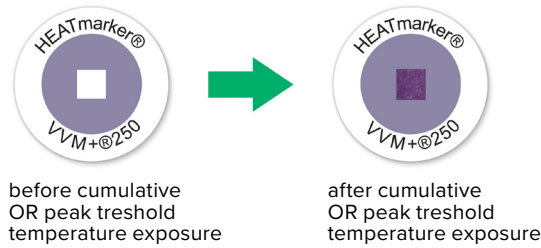
VVM+ uses two proprietary sensing technologies, including the newest threshold indicator technology, which is layered on the classic VVM in a highly precise manufacturing process.

Together, heat stable vaccines and VVM+ positively impact vaccine coverage and equity, while lowering the entire cost of vaccine delivery by:

- Saving money on cold chain equipment and supplies
- Reducing storage and transportation volume and cost
- Simplifying logistics and saving healthcare worker time
- Reducing the risk of vaccine freezing

### How It Works

HEATmarkerVVM+ visually shows whether there has been either a cumulative heat exposure or a peak heat threshold exposure.

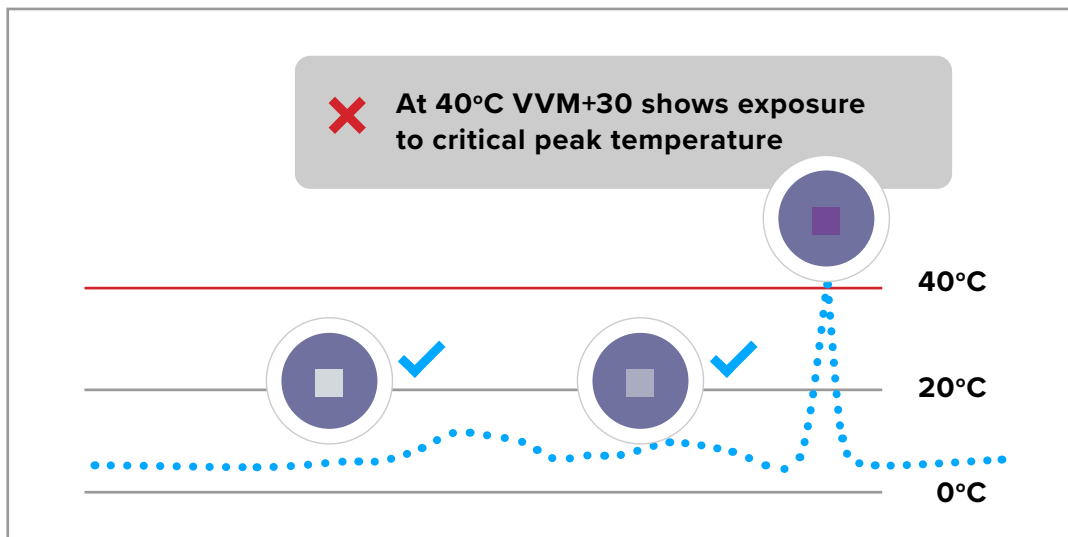


### Combined Heat and Peak Threshold Indication

- VVM+ looks like and is interpreted the same as the traditional VVM
- VVM+ reacts like a VVM up to the threshold response temperature
- At 40°C, VVM+ reaches end point rapidly to show exposure to critical peak temperature
- VVM+ supports CTC initiatives

### Protecting Vaccines Outside the Cold Chain

In addition to the cumulative heat exposure capability, VVM+ addresses the risk that vaccines stored outside of the cold chain may be subjected to a peak temperature excursion which could cause rapid vaccine degradation. It responds when the vaccine has exceeded the high temperature threshold limit. It also assists healthcare workers in the last mile, when the vaccine will be out of the cold chain.



**FACT SHEET**



ZEBRA HEATMARKER® VVM+

**How to Select the Right HEATmarker VVM+**

HEATmarker VVM+ is a temperature-monitoring device in the format of a pressure-sensitive label.

Manufacturers choose the HEATmarker VVM+ that best correlates to the heat stability of the vaccine in compliance with Immunization Vaccines and Biologicals (WHO) specifications.

The table below is used to identify the appropriate category of HEATmarker VVM+.

Vaccine stability category	HEATmarker VVM+	Cumulative temperature specification	Days to end point	Peak temperature specification	Shelf Life (years from date of manufacture)	Size
Very high stability		37°C	250	40°C	2 years	11 mm diameter
High stability*		37°C	30	40°C	2 years	11 mm diameter

Tap into the future of temperature monitoring at [www.zebra.com/temmonitoring](http://www.zebra.com/temmonitoring)

COMZ HEATmarker VVM+ Fact Sheet V2



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