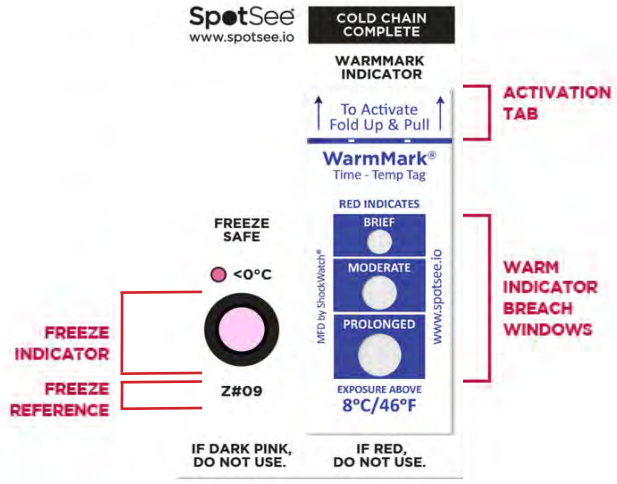
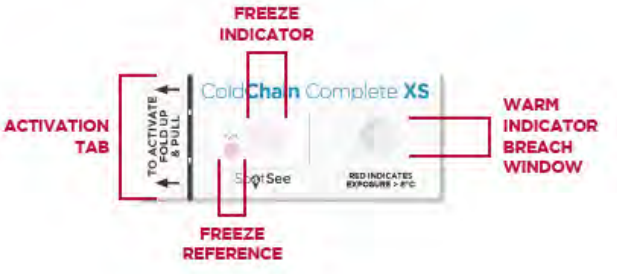
Cold Chain Complete Temperature Indicator User Manual

Arming & Use

1. The warm indicator breach window(s) of the ColdChain Complete should be white prior to pulling the tab and arming the device, while the freeze indicator dot should be light magenta.
2. Before arming, most ColdChain Complete and ColdChain Complete XS products should be placed in an environment at least 5°C (9°F) below the device's warm threshold temperature for a minimum of 30 minutes. This process is known as pre-conditioning. Alternatively, the 0°- 8°C and 2°- 8°C configurations should be pre-conditioned at their mid-point temperature of 4°C and 5°C respectively, so as to not risk activating the freeze indicator.
3. To arm the ColdChain Complete warm indicator, fold, then pull the indicator's activation tab until the tab and barrier film are completely removed from the device. The freeze indicator portion requires no arming.
4. If using a ColdChain Complete with a warm indicator threshold temperature below ambient temperature, immediately place the indicator in the environment to be monitored to avoid early activation.
5. Place, or adhere if using the XS model, the ColdChain Complete close to the product being monitored and where it will be visible to the receiver of the monitored shipment.





Interpreting Warm Indicator

Any sign of colour in the warm indicator 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.

Warm indicator run out times are based on constant temperature 2°C above the threshold. Exposure to higher temperatures will result in faster run out.

Interpreting Freeze Indicator

SpotSee freeze indication uses a colour changing indicator dot (large) and a static reference dot (small). Freeze exposure beyond the time and temperature specification is shown when the indicator dot is as dark, or darker, than the reference dot.
An indicator dot will start light magenta and show minor colour darkening but remain lighter than the reference dot. This may mean the indicator saw brief exposure to the threshold temperature.

Freeze indicator activation times are based on constant temperature 1°C below the threshold. Exposure to lower temperatures will result in faster colouration.

Run Out Times

Cold Chain Complete				
Temperature Range	Run Out Time			Freeze Activation
Freeze & 3 Window Warm Indicator Card	**Brief**	**Moderate**	**Prolonged**	**Within**
2°C – 8°C	2 hours	12 hours	48 Hours	90 Minutes
0°C – 8°C	2 Hours	12 Hours	48 Hours	60 Minutes
Freeze & Single Window Warm Indicator Card				
0°C – 25°C	—	—	8 hours	60 Minutes
2°C – 25°C	—	—	8 hours	90 Minutes
0°C – 8°C	—	—	8 hours	60 Minutes
2°C – 8°C	—	—	8 hours	90 Minutes

Cold Chain Complete XS				
Temperature Range	Run Out Time			Freeze Activation
Freeze & Single Window Warm Indicator Card	**Brief**	**Moderate**	**Prolonged**	**Within**
0°C – 8°C	—	—	8 Hours	60 Minutes
0°C – 8°C	—	—	48 Hours	60 Minutes
2°C – 8°C	—	—	8 hours	90 Minutes
2°C – 8°C	—	—	48 hours	90 Minutes
0°C – 25°C	—	—	8 hours	60 Minutes
2°C – 25°C	—	—	8 hours	90 Minutes

Specifications

Accuracy of Temperature	±1°C / ±2°F for both freeze and warm indicators
Storage Condition	Store in dark environment between 15°C - 25°C (59°F - 77°F), 35-55% RH
Shelf Life	1 years
Arming Method	Freeze indicator: None / Warm indicator: Pull-tab
Mounting Method	ColdChain Complete: Place indicator as close to the product being monitored as possible. ColdChain Complete XS: Adhere or place indicator as close to product being monitored as possible.