SpotSee®

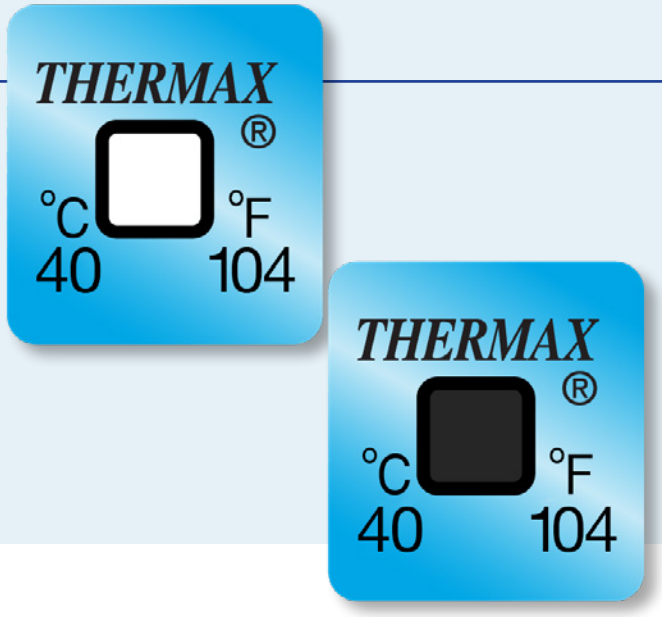
# Thermax Encapsulated Indicators Case Study

## Company Profile

**Industry:** Medical

**Application:** Absorbable Sutures

**Challenge:** Transport of medical devices




## Protect Absorbable Sutures from Heat Degradation with SpotSee

Absorbable sutures have evolved since the 1960s from catgut to synthetic materials, but they all have one thing in common: They break down in response to heat. While the conditions that trigger degradation vary by product, a threshold of 40°C/104°F is not unusual. Sutures can reach that temperature easily during warm weather shipping.

# Case Study: Thermax Encapsulated Indicators

Unlike traditional sutures, absorbable sutures gradually degrade in the body. Depending on the suture material, this occurs from days to a few years. For most uses, degradation in one to three weeks is common. The ability to degrade naturally makes them useful in closing internal wounds (including surgeries for hip replacements and C-sections) and when a patient may be unable to return to a medical facility to have sutures removed. In the past few years, they also are being used to close skin surface lacerations, such as those under casts or splints, and even on the face, where the skin heals quickly and the prolonged presence of stiches could lead to less than optimal cosmetic results.

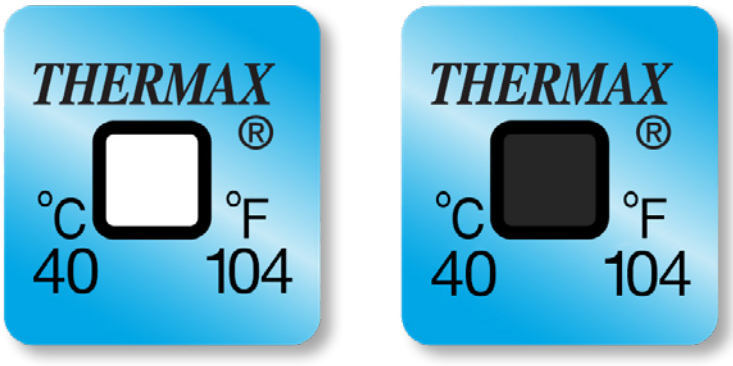
Sutures typically are packaged in a stiff suture holder in a sterile, hermetically sealed envelope, which itself is contained in another heat-sealed envelope to maintain sterility. During much of the year ambient-temperature shipping may be sufficient, but during the warmer months – especially in recent years, where heat waves across the world are making temperatures soar above normal – ambient controlled temperature shipping is smart.

Ambient controlled temperature doesn't involve cold handling. Instead, the sutures are packaged in insulated boxes or pallets to resist the high temperatures that can arise from sitting on a tarmac or in a delivery truck during transit from the manufacturer, to the distributor and to the hospital or clinic. These packages are designed to ensure that temperatures remain between 15° to 25° C / 59° to 77° F.

But what if it doesn't? Temperatures that become too hot can cause the sutures to begin degrading. Then, if they are used, the stitch may dissolve early or not hold as it should, which may require medical intervention.

To avoid that problem, some providers of absorbable sutures include temperature indicators in their shipments. SpotSee's Thermax® Encapsulated Indicators show medical personnel at a glance whether temperatures within the packaging exceeded safe temperature thresholds. With this go/no go clarity, medical professionals know whether the suture can go into inventory or should be discarded.

Thermax® temperature indicators permanently record the highest temperature reached by the indicator and change color when the threshold temperature is reached. They are available as single or multi-temperature levels.  Users can know if a threshold was exceeded, or by how much. And, as these indicators record a range of peak temperatures, users also know how close temperatures came to reaching their temperature limits.



# Case Study: Thermax Encapsulated Indicators

These Thermax® temperature indicators work by incorporating a series of materials with different, specific melting points. Color changes are permanent and precise. These temperature labels are available in a range of temperature thresholds to meet the needs of virtually any product.

Importantly, these temperature indicators are irreversible and tamper-proof, providing an accurate, objective temperature record that can be attached to inspection reports and to substantiate claims for product returns or reimbursement.

Before every suture is used, medical professionals need to know it will work and that it has the durability it needs to help patients heal.  SpotSee's Thermax® Encapsulated Indicators provide the assurance they need, to use absorbable sutures with confidence.

To learn how SpotSee's Thermax® Encapsulated Indicators can help you protect sensitive shipments of medical equipment or supplies, contact SpotSee.

**spotsee.io/contact**

https://spotsee.io/case-study/thermax-encapsulated-indicators-safeguard-absorbable-sutures

**Sector:** Medical

Thermax® Encapsulated Indicators ensure that temperatures during transportation do not exceed vital temperatures.