



Solutions for Adhesive Curing

Application Case Summary

Encapsulation & Potting Cure

Ref: 2-307

Topic Reference:

Potting of automotive electronics or electrical device to protect them from the surrounding environment. Most of the time, the devices need protection from moisture, however, potting can also provide heat dissipation, shock protection and be a flame retardant. Electronic components potted include capacitors, switches, temperature sensors as well as high value medical devices and transducers.



The Problem:

Many high value electronic assemblies especially those for medical instrumentation often require the use of high performance potting or encapsulation. The quality of the encapsulation is critical to the integrity of the instrument and its application. These potting materials typically require long thermal cure cycles. This can cause problems in the manufacturing of high value products. First is the long exposure of the device at elevated temperatures that can stress the packaging and device interconnects. Second is the feedback time between potting and inspection of the device for quality. The cure process can often take 8 to 10 hours while products sit in a curing oven. A significantly reduced cycle time would allow rapid feedback and reduce the WIP of expensive devices.



Realized Benefit with VFM:

A manufacturer of electronic devices has adopted VFM for cure of the potting compound that encapsulate a high value sensor. Rapid cure with VFM allowed reduction in the cycle time from 10 hours to around 30 minutes. Material properties, product quality and device functionality were identical or better in VFM cured devices as compared to conventionally cured devices.



Summary:

- **Reduced Process Cycle Time by 95% (10 hrs to 30 min)**
- **Enabled Rapid Feedback to Manufacturing Quality Control**
- **Provided Equivalent or Improved Product Specifications**

