

# NASA TECH BRIEF



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## Braze Alloys Used as Temperature Indicators

### The problem:

To devise a method of measuring temperatures over the range of 175° to 2100° F on metal surfaces where it is not feasible to employ conventional temperature detectors such as thermocouples and thermistors.

### The solution:

Apply patches of braze alloys having known fusion points to portions of the surface where temperature indications are required.

### How it's done:

Several braze alloys having fusion points lying on either side of the estimated temperature to be measured are selected. Small patches of these alloys (approximately 0.25-inch diameter  $\times$  0.002-inch thick) are fused onto the surface of the base metal before it is exposed to operating temperature, and scribe marks are made on the solidified alloy deposits. When the surface is heated, the patches that fuse at temperatures above the operating temperature of the base metal will remain unaffected. The scribe marks on the patches that fuse at or below the operating temperature of the base metal will disappear. A de-

tailed inspection of the alloy patches after the base metal has been cooled will provide an indication of the temperature reached by the base metal.

### Notes:

1. By proper selection of braze alloys or solders, it should be possible to measure metal surface temperature with an accuracy of 30° to 50° F.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
AEC-NASA Space Nuclear Propulsion  
Office  
U.S. Atomic Energy Commission  
Washington, D.C., 20545  
Reference: B66-10274

### Patent status:

No patent action is contemplated by NASA.

Source: L. A. Shurley and R. E. Rice  
of Aerojet-General Corporation  
under contract to  
Space Nuclear Propulsion Office  
(NU-0063)

Category 01