

NASA TECH BRIEF



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New Brazing Alloy Eliminates Metal-Stress Cracking

The problem: To formulate a brazing alloy that will avoid the liquid-metal stress cracking of base metals when applied to 347, 316, and 410 stainless steels and certain other alloys.

The solution: A silver 15 zinc brazing alloy that has shown good resistance to corrosion and interface corrosion between itself and the base metals when applied to the above base metals.

How it's done: Basic ingredients are in the following percents by weight:

| | |
|--------|------------|
| Zinc | 13.5-15.0 |
| Copper | *0.93-1.25 |
| Nickel | *0.70-0.94 |
| Silver | Balance |

*The ratio of nickel to copper must not be less than 3/4 to 1.

Standard procedures are used in combining the ingredients and applying the melt.

Notes:

1. Silver 15 zinc brazing alloy has been used to braze bands to tubes and to patch repair tubes on the J-2

and H-1 thrust chambers. Results after engine tests have shown the brazing alloy to have performed satisfactorily.

2. Inquiries concerning this invention may be directed to:

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 Western Operations Office
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 Santa Monica, California, 90406
 Reference: B65-10397

Patent status: NASA encourages the immediate commercial use of this invention. It is owned by NASA and inquiries about obtaining royalty-free rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

Source: Edward R. Roeder and
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 North American Aviation, Inc.,
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