

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 2675A

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### NICKEL ALLOY BRAZING

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for joining corrosion and heat resistant steels and alloys, but may also be used for joining carbon and low alloy steels. Recommended for use on assemblies which will operate at combinations of stress and temperature too high for copper brazed joints or where corrosion and oxidation resistant joints are required.
3. PROCESS REQUIREMENTS:
  - 3.1 Surface Condition: The surfaces to be joined shall be clean prior to assembly. Surface roughness of approximately 125 microinches, rms, is desirable, particularly when brazing alloy is applied by spraying, but is not required. If clearance between mating parts will be less than 0.002 in. on a side or if joint length is over 0.5 in., mating surfaces should be roughened by blasting with steel or iron shot or grit or with silicon carbide abrasive, or by straight line knurling. If surfaces are prepared by blasting, use of abrasive with particle size approximately the same as SAE 50 or SAE 120 cast iron grit is recommended, and residual abrasive shall be removed from surfaces to be joined before they are assembled. Blasting with sand or zirconite shall not be used for final cleaning or surface preparation.
  - 3.2 Fluxing: Flux shall not be used unless permission be obtained from purchaser before brazing.
  - 3.3 Assembly: The parts to be joined shall be assembled so that the clearance between mating surfaces is within the tolerances specified on the drawing. (Note. Clearance of approximately 0.002 in. on a side is recommended.) The assembly should be supported so that the parts will be in proper alignment after brazing.
  - 3.4 Brazing Material: Nickel brazing alloy shall conform to AMS 4775 unless another brazing alloy such as AMS 4777 or AMS 4778 is required by the drawing. Sufficient brazing alloy shall be placed within or in close proximity to the joint.
  - 3.5 Joining: Heating shall be performed in a furnace with a suitable protective atmosphere free from sulfur compounds. Alternatively, heating may be by induction, using a suitable protective atmosphere in a jacket surrounding the work. A dry hydrogen atmosphere with dew point not higher than -40 F is recommended but is not a requirement of this specification. The brazing temperature range shall be from 25 F above the actual liquidus to 200 F above the maximum liquidus specified for the brazing alloy used. Parts shall be heated until the alloy melts and the joint is formed. After the alloy melts, heating may be prolonged up to 30 min. at heat to aid solution, but washing of joint shall be avoided.

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