

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 5366

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Revised

### STEEL CASTINGS, PRECISION INVESTMENT, CORROSION AND HEAT RESISTANT 25Cr - 20Ni

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Parts, such as nozzle diaphragm vanes and assemblies requiring both corrosion and heat resistance, and where such parts may require welding during fabrication. Parts and assemblies requiring oxidation resistance up to approximately 2000F but useful at the higher temperatures only when stresses are very low. Strength at elevated temperatures is similar to that of the 18-8 types.
3. **COMPOSITION:** Castings shall conform to the following:

Carbon	0.18 max
Manganese	2.00 max
Silicon	0.50-1.50
Phosphorus	0.04 max
Sulfur	0.03 max
Chromium	23.00-26.00
Nickel	19.00-22.00
Molybdenum	0.50 max
Copper	0.50 max

4. **CASTING:** Castings shall be poured either from remelted master heat metal or directly from a master heat. A master heat is previously refined metal of a single furnace charge. Gates, sprues, risers and rejected castings shall only be used in preparation of master heats but shall not be remelted directly, without refining, for pouring of castings.
5. **CONDITION:** As cast, unless otherwise specified.
6. **QUALITY:**
  - (a) Castings shall be uniform in quality and condition, sound and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts. Castings in which defects are revealed during fabrication will be subject to rejection. Castings shall have smooth surfaces and shall be well cleaned. Unless otherwise specified, metallic shot or grit shall not be used for final cleaning.
    - (b) When castings are broken for fracture test, the fracture shall have a uniform color and be substantially free from oxides and other defects.
    - (c) Unless otherwise specified, castings shall be produced under radiographic control.
    - (d) Inspection standards and procedures shall be as agreed upon by purchaser and vendor.
    - (e) Castings shall not be repaired by plugging, welding or other methods without written permission from the purchaser.

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