AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 5550A

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ALLOY SHEET AND STRIP, CORROSION AND HEAT RESISTANT
Nickel Base - 15.5Cr - 0.75Ti - 3.25Al

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 parts and assemblies requiring oxidation resistance up to approximately 2000 F and where parts require welding during fabrication.

3. COMPOSITION:

Carbon	0.10 max
Manganese	1.00 max
Silicon	0.70 max
Sulfur	0.01 max
Chromium	14.0 - 17.0
Titanium	0.25 - 1.00
Aluminum	2.75 - 3.75
Cobalt, if determined	1.0 max
Iron	2.00 max
Copper	0.50 max
Nickel + Cobalt	remainder

3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2269.

4. CONDITION:

4.1 Sheet: Cold rolled, annealed, descaled, and leveled.

4.2 Strip: Cold rolled and annealed. Strip need not be bright and may have an oxidized surface.

5. TECHNICAL REQUIREMENTS:

5.1 Hardness: Shall be not higher than Rockwell B 98 or equivalent except that hardness of strip 0.025 in. and over shall be as agreed upon by purchaser and vendor.

5.2 Bending: Sheet shall withstand, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the nominal thickness of the material, with axis of bend parallel to the direction of rolling.

5.3 Grain Size: Grain size of material 0.010 in. and over in thickness shall average not over 0.0060 in. in diameter (Grain Size No. 2.5) when determined in accordance with ASTM E112-60T.

5.4 Properties After Precipitation Heat Treatment: Material shall conform to the following requirements after being precipitation heat treated by heating to 1400 F ± 25, holding at heat for 5 hr, and cooling in air.

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5.4.1 Tensile Properties:

5.4.1.1 Strip:

ø	Nominal Thickness Inch	Tensile Strength psi, min	Elongation % in 2 in., min
	Under 0.010	125,000	--
	0.010 to 0.125, incl	125,000	15

5.4.1.2 Sheet:

ø	Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 31,500,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in. min
	0.010 to 0.025, excl	125,000	60,000	0.0078	17
	0.025 to 0.250, incl	125,000	60,000	0.0078	25

5.4.1.3 For sheet in widths 9 in. and over, tensile test specimens shall be taken with the axis perpendicular to the direction of rolling. For all strip and for sheet in widths less than 9 in., tensile test specimens shall be taken with the axis parallel to the direction of rolling.

5.4.2 Hardness: Material 0.005 in. and over in thickness shall have hardness not lower than Rockwell C 21 or equivalent.

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances for sheet in widths 44 in. and under and for strip, other than thickness, shall conform to all applicable requirements of the latest issue of AMS 2262. Thickness tolerances for strip shall be ± 10% of the nominal thickness.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests for chemical composition of each heat in the shipment, and the results of tests on each thickness from each heat to determine conformance to the technical requirements of this specification. This report shall include the purchase order number, heat number, material specification number, thickness, size, and quantity from each heat.