AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 5580D

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ALLOY TUBING, SEAMLESS, CORROSION AND HEAT RESISTANT
Nickel Base - 15.5Cr - 8.0Fe

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Parts and assemblies requiring both corrosion and oxidation resistance, and where such parts may require welding during fabrication. Parts and assemblies requiring oxidation resistance up to approximately 2000 F (1093 C), but useful at the higher temperatures only when stresses are low. Strength at elevated temperatures is similar to that of the 18-8 type of steel.

3. COMPOSITION:

	min	max
Carbon	--	0.15
Manganese	--	1.00
Silicon	--	0.50
Ø Sulfur	--	0.015
Chromium	14.00	17.00
Nickel + Cobalt	72.00	--
Cobalt (1)	--	1.00
Iron	6.00	10.00
Columbium + Tantalum (1)	--	1.00
Titanium (1)	--	0.50
Aluminum (1)	--	0.35
Copper	--	0.50

(1) Determination not required for routine acceptance.

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

4. CONDITION: Cold drawn and annealed, and pickled if necessary, unless otherwise specified.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

Tensile Strength, psi	80,000 - 105,000
Yield Strength at 0.2% offset or at 0.0059 in. in 2 in. extension under load, (E = 31,000,000), psi	30,000 min
Elongation, % in 2 in.	35 min

5.2 Flarability: Tubing with nominal OD of 0.188 - 2.000 in., incl, and under shall be capable of being flared without formation of cracks or other visible defects. Specimens for flaring may be cut from any portion of the tube, or an entire tube may be used as a specimen. The end of the specimen to be flared shall be cut square, with the cut end smooth and free from burrs, but not rounded. The specimen shall, at room temperature, be forced axially with steady pressure over a hardened and polished tapered pin having a 74 deg included angle, to produce a permanent expanded OD not less than 1.3 times the original nominal OD.