



# AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
485 LEXINGTON AVENUE, NEW YORK, N. Y. 10017

## AMS 4951B

Superseding AMS 4951A

Issued 3-1-58

Revised 5-1-68

### TITANIUM WIRE, WELDING

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 inert gas arc welding.
3. **COMPOSITION:**

	min	max
∅ Iron	--	0.20
∅ Oxygen	--	0.18
∅ Carbon	--	0.08
∅ Nitrogen	--	0.05
∅ Hydrogen	--	0.015 (150 ppm)
∅ Other Elements, each	--	0.10 (1)
∅ Other Elements, total	--	0.60 (1)
∅ Titanium	remainder	

(1) Determination not required for routine acceptance.

- 3.1 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2249.

∅ 4. **CONDITION:** As-drawn, having tensile strength not higher than 130,000 psi, and descaled.

#### 5. TECHNICAL REQUIREMENTS:

5.1 **Tensile Properties After Annealing:** Wire shall be capable of showing tensile strength of 50,000 - 80,000 psi when annealed by heating to  $1300\text{ F} \pm 15$  ( $704.4\text{ C} \pm 8.3$ ) in an inert atmosphere, held at heat for approximately 30 min., cooled in air, and descaled.

5.2 **Welding:** Melted wire shall flow smoothly and evenly during welding and shall be capable of producing acceptable welds.

5.3 **Spooled Wire:** Shall conform to the following, unless otherwise agreed upon by purchaser and vendor.

∅ 5.3.1 **Cast:** Wire shall have imparted to it a curvature such that a specimen sufficient in length to form one loop, when cut from the spool and laid on a flat surface, shall form a circle not less than 15 in. and not greater than 30 in. in diameter.

∅ 5.3.2 **Helix:** The specimen on which cast was determined, when laid on a flat surface and measured between adjacent turns, shall show a vertical separation not greater than 1 inch.

∅ 5.3.3 **Layer Winding:** Wire shall be closely wound in layers but adjacent turns within a layer need not necessarily be touching; shall be wound so as to avoid producing kinks, waves, and sharp bends; and shall be free to unwind without restriction caused by overlapping or wedging. The outside end of the spooled wire shall be so treated that it may be readily located.

Technical Board rules provide that: "All technical reports, including standards approval industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard technical report. In formulating and approving technical reports, the Board and its Committee members will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."