

MATERIAL SPECIFICATIONS

Issued 7-1-56

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York 17, N.Y.

Revised

MAGNETIC ALLOY SHEET AND STRIP
Nickel-Iron Alloy
Annealed

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Sheet and strip.
3. APPLICATION: Primarily for parts used in magnetic circuits requiring high magnetic permeability at low flux densities after high temperature annealing in hydrogen.
4. COMPOSITION: Shall be a metallic alloy containing approximately 80% nickel, plus iron and other alloying elements (usually copper and chromium) in such proportions as to meet the technical requirements.
5. CONDITION: Unless otherwise specified, material shall be hot rolled with or without subsequent cold reduction, annealed, and descaled, having a surface appearance as close as possible to a commercial corrosion resistant steel No. 2D finish; actual acceptance and rejection standards shall be as agreed upon by purchaser and vendor.
6. TECHNICAL REQUIREMENTS:
 - 6.1 Hardness: Unless otherwise specified, material shall have hardness not higher than Rockwell B 75 or equivalent.
 - 6.2 Magnetic Properties After Heat Treatment: Material shall conform to the following requirements after annealing by heating to $2050\text{ F} \pm 25$ in a dry hydrogen atmosphere (-60 F max dew point), holding at heat for 1 hr, and cooling to 1100 F at a rate not greater than 100 F per hr in a non-oxidizing atmosphere.

6.2.1 Maximum Permeability, min	70,000	ASTM A341-49
6.2.2 Permeability at 100 gaussess, min	15,000	ASTM A341-49
6.2.3 Induction at 100 oersteds, gaussess, min	6,500	ASTM A341-49
 7. 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.
 8. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2232.