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

AMS 7718

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Revised

MAGNETIC ALLOY
Nickel-Iron Alloy

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

2. FORM: Rod, bar, tubing, forgings, and forging stock.

3. APPLICATION: Primarily for parts used in magnetic circuits requiring high magnetic permeability and saturation induction after high temperature annealing in hydrogen.

4. COMPOSITION: Shall be a metallic alloy containing approximately 50% nickel and 50% iron with perhaps several other alloying elements in such proportions as to meet the technical requirements.

5. CONDITION:

5.1 Rod, Bar, and Tubing: Unless otherwise specified, material shall be cold-drawn; actual acceptance and rejection standards shall be as agreed upon by purchaser and vendor.

5.2 Forgings: As ordered.

5.3 Forging Stock: As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

6.1 Hardness: Unless otherwise specified, material shall have hardness not lower than Rockwell B 90 or equivalent.

6.2 Magnetic Properties After Heat Treatment: Material shall conform to the following requirements after annealing by heating to 2150 F + 25 in a dry hydrogen atmosphere (-60 F max dew point), holding at heat for 4 hr, and cooling to 1100 F at a rate not greater than 100 F per hr in non-oxidizing atmosphere; tests shall be performed in accordance with Sections 7 thru 19 of ASTM A341-55, using an assumed density of 8.26 g per cubic centimeter.

6.2.1 Maximum Permeability, min

Under 5/16 in. section	40,000
5/16 in. section and over	20,000

6.2.2 Permeability at 100 gausses, min

Under 5/16 in. section	6,000
5/16 in. section and over	4,000

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