

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 7310A

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RINGS, PISTON Cast Iron

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

Total Carbon	3.50 - 3.90
Silicon	2.20 - 3.10
Manganese	0.40 - 0.80
Phosphorus	0.30 - 0.80
Sulphur	0.10 max

(b) Alloying elements may be added with the approval of the purchaser, as required to produce a high quality iron meeting the requirements of this specification.
3. CONDITION: Rings shall be made from individual castings, conforming to the chemical composition of section 2 above, in the as-cast condition.
4. HARDNESS: Finished rings shall have hardness of Rockwell B97-104, unless otherwise specified.
5. MICROSTRUCTURE: The microstructure of castings and finished rings shall be free from abnormal segregation. Matrices shall be essentially fine pearlite, with no appreciable amounts of massive cementite. Both phosphide eutectic and graphite shall be evenly distributed, and the latter shall be present for the most part in the form of randomly oriented flakes.
6. QUALITY: (a) Finished rings shall be of uniform quality and condition, sound, clean, and free from defects detrimental to performance of parts.

(b) Rings shall be subject to inspection by any method which will reveal defects.
7. FINISH: Sides shall be ground or lapped. Periphery shall be turned smooth, unless otherwise specified on drawing.
8. CIRCULARITY: The diameter through the gap shall exceed the diameter 90° from the gap by not less than 0.0025 inch per inch of nominal ring diameter when finished ring is held around periphery by a flexible steel band 0.0025 - 0.0035 inch thick and of width approximately equal to that of ring and whose inside circumference is equal to the nominal outside circumference of ring plus or minus 0.003 inch.