



AEROSPACE MATERIAL SPECIFICATION

AMS3041™

REV. G

Issued 1974-03
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Revised 2023-02

Superseding AMS3041F

Magnetic Particles, Nonfluorescent
Wet Method, Oil Vehicle, Ready-to-Use

RATIONALE

AMS3041G is the result of a Five-Year Review and update of the specification. The revision adds classes of powder to define testing requirements based on type of powder (1.1, 1.3, 3.1, 3.3.7, 4.2.1, 8.4), updates conversion of foot-candles (3.3.3.1, 3.3.4), renames test procedures (3.3.6, 3.3.7), and requires all testing for acceptance thereby deleting periodic and preproduction tests and approvals (4.2, 4.3).

1. SCOPE

1.1 Form

This specification covers nonfluorescent magnetic particles in the form of a mixed, ready-to-use suspension in an odorless inspection oil vehicle. The magnetic particles shall be in the form of either a single material or composite material as defined in 1.3.

1.2 Application

These products have been used typically as the inspection medium in a wet magnetic particle inspection system in accordance with ASTM E3024/E3024M, but usage is not limited to such application.

1.3 Classification

1.3.1 The magnetic particles covered by this specification are classified as follows:

Type 1 - Single particles, e.g., iron or iron oxide

Type 2 - Composite material, e.g., iron and pigment

1.4 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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<https://www.sae.org/standards/content/AMS3041G/>

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2641 Vehicle, Magnetic Particle Inspection, Petroleum Base

AS5282 Tool Steel Ring for Magnetic Particle Inspection

AS7766 Terms Used in Aerospace Metals Specifications

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E11 Woven Wire Test Sieve Cloth and Test Sieves

ASTM E709 Guide for Magnetic Particle Testing

ASTM E3024/E3024M Standard Practice for Magnetic Particle Testing for General Industry

2.3 Definitions

Terms used in AMS are defined in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Material

The product shall be composed of durable magnetic particles, suitable for long-term use. Particles are classified solely to define the testing requirements for the particle type supplied. Particles shall be supplied ready-to-use, mixed in the proper proportion with odorless inspection oil conforming to AMS2641 or equivalent.

3.2 Storage Life

The product shall meet the requirements specified in 3.3 when tested at any time up to 12 months from date of manufacture.

3.3 Properties

The product shall conform to the following requirements. Tests shall be performed on the product supplied and in accordance with specified test procedures:

3.3.1 Contamination

The product shall show no evidence of foreign material, agglomeration, or scum, determined by visual examination of the test suspension at the following times:

3.3.1.1 Immediately after mixing the test suspension.

3.3.1.2 After mixing the test suspension, allowing it to stand for not less than 30 minutes, and agitating it slightly.