SAE INTERNATIONAL

AEROSPACE STANDARD

AS8942™ REV. A

Issued 2014-03
Revised 2022-02

Superseding AS8942

Bearings, Plain and PTFE Lined, Self-Aligning

RATIONALE

AS8942A is a Five-Year Review. Updated anti-icing specification, added retention of qualification section, and updated various sections to latest verbiage with minor editorial changes.

NOTICE

This initial publication of this document was taken directly from U.S. Military Specification MIL-B-8942 (Rev A including amendments) and contained editorial and format changes required to bring it into conformance with the publishing requirements of SAE Technical Standards. The initial SAE publication of this document was to replace MIL-B-8942. This SAE Standard may retain the same part numbers established by the original military document.

THIS SPECIFICATION IS NOT RECOMMENDED FOR NEW DESIGN. FOR U.S. DEPARTMENT OF DEFENSE CONTRACTS, AS8942 SHALL ONLY BE USED FOR EXISTING OR DERIVATIVE DESIGNS. SEE TABLES 3 TO 6 FOR INTERCHANGEABILITY SUPERSESSION DATA. FOR NEW DESIGN, USE AS81820.

1. SCOPE

This SAE Aerospace Standard (AS) establishes the requirements for self-aligning, self-lubricating plain spherical bearings incorporating polytetrafluoroethylene (PTFE) in a liner between the ball and the outer race for use in a temperature range of -65 to +250 °F (-54 to +121 °C).

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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.

AMS1424 Fluid, Aircraft Deicing/Anti-Icing, SAE Type I

AMS2460 Plating, Chromium

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AS8942A/

AS1241	Fire Resistant Phosphate Ester Hydraulic Fluid for Aircraft
AS21230	Bearing, Plain, Self-Aligning, Grooved Outer Ring, PTFE Lined, Wide
AS21231	Bearing, Plain, Self-Aligning, PTFE Lined, Wide
AS21232	Bearing, Plain, Self-Aligning, Grooved Outer Ring, PTFE Lined, Narrow
AS21233	Bearing, Plain, Self-Aligning, PTFE Lined, Narrow

2.2 ANSI Accredited Publications

Copies of these documents are available online at http://webstore.ansi.org/.

ASME B46.1	Surface Texture (Surface Roughness, Waviness and Lay)
ANSI/ASME Y14.100	Engineering Drawing Practices
ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes

2.3 U.S. Government Publications

Copies of these documents are available online at https://quicksearch.dla.mil.

MIL-DTL-197	Packaging of Bearings, Associated Parts and Subassemblies
MIL-DTL-5624	Turbine Fuel, Aviation, Grades JP-4, JP-5 and JP-5/JP-8ST
MIL-PRF-5606	Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordnance
MIL-PRF-7808	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
MIL-STD-129	Standard Practice Military Marking for Shipment and Storage
MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests - Method 507.5 Humidity Resistance
MIL-STD-2073-1	Standard Practice for Military Packaging

3. REQUIREMENTS

3.1 Aerospace Standard (AS) Sheets

The individual item requirements shall be as specified herein and in accordance with the applicable AS product standards. In the event of any conflict between the requirements of this specification and the AS product standard, the latter shall govern.

3.2 Qualification

The bearings furnished under this specification shall be a product which is in accordance with the applicable Aerospace Standard (AS) and which has been subjected to and which have passed the qualification tests specified herein, and which also have been listed on or approved for listing on the applicable Qualified Products List (QPL).

3.2.1 Retention of Qualification

The continued listing of a product on the Qualified Products List is dependent upon a periodic verification of the manufacturer's continued compliance with the requirements of this document and with standardization regulations. As part of that verification process, each manufacturer must complete DD Form 1718 every two years. This form, supplied by the NAWCAD Joint Base MDL, NJ is to be signed by a responsible official of management and sent to Commander, Naval Air Warfare Center Aircraft Division, Code 412000B120-3: Joint Base MDL, NJ 08733-5100.

3.2.2 Product Change

Any change in product design, description, materials, processing, procedures, or plant location shall be reported to the qualifying activity and may require requalification of the product to an extent determined by the qualifying activity. Any other specific changes, which must be brought to the qualifying activities attention, shall be identified in the qualification notification letter.

3.2.3 Product Manufacture

Except for the bonding operations, the manufacturer is permitted to subcontract manufacturing operations without violating the requirements of 3.2.1. The bonding operations shall be performed in the plant listed on the Qualified Products List. Manufacture of the self-lubricating liner material may also be subcontracted. Any change in (1) the liner manufacturer, (2) the liner manufacturing procedures, or (3) the materials used in manufacture of the liner will require requalification to an extent determined by the qualifying activity. The manufacturer is responsible for meeting all requirements of the standard and for the quality of the end product, whether it is manufactured totally in-house or some of the operations are performed by a subcontractor. Inherent in the responsibility for the end product it is the responsibility of the manufacturer to verify that the subcontractor’s processes meet standard requirements.

3.3 Materials

Material for the ball, outer race, and liner shall be in accordance with the applicable AS product standard. PTFE shall be included in the liner in such a manner that the bearing will conform to all requirements of this specification.

3.3.1 Plating

Plating of the ball will be permitted, at the option of the manufacturer, and shall be per AMS2460.

3.4 Design

Bearing design shall conform to that shown on AS21230, AS21231, AS21232, and AS21233.

3.5 Construction

The liner shall be so secured that all relative motion shall be between the wear surface of the liner and the ball. The bearing shall not have loading slots. Except as otherwise specified on the applicable AS product standard, the details of the design shall be optional.

3.5.1 Dimensions and Tolerances

Dimensions and tolerances shall be as specified on the applicable AS product standard. Dimensions not shown shall be at the option of the manufacturer.

3.5.2 Surface Texture

The surface texture shall be in accordance with the applicable AS product standard and ASME B46.1. Bearings shall be free of any surface defects, which may be detrimental to satisfactory installation, performance or bearing life as defined in this specification. Unless otherwise specified, liner surfaces are exempt from surface texture measurements.

3.5.3 Lubrication

Initial lubrication by the manufacturer will be permitted. Relubrication will not be permitted.