SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS-L-18331 | REV. A

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Superseding AMS-L-18331

Lead Alloy Pig

FSC 9650

RATIONALE

AMS-L-18831A has been reaffirmed to comply with the SAE five-year review policy.

NONCURRENT NOTICE

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of September, 2007. It is recommended, therefore, that this specification not be specified for new designs.

"NONCURRENT" refers to those specifications which have previously been widely used and which may be required for production or processing of existing designs in the future. The Aerospace Materials Division, however, does not recommend these specifications for future use in new designs. "NONCURRENT" specifications are available from SAE upon request.

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NOTICE

This document has been taken directly from U.S. Military Specification MIL-L-18331B(AS) and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-L-18331B(AS). Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this SAE technical document.

1. SCOPE:

1.1 Scope:

This specification covers pigs of one type of lead alloy used in the making of forming dies.

2. APPLICABLE DOCUMENTS:

This section is not applicable to this specification.

3. REQUIREMENTS:

3.1 Chemical composition:

The chemical composition of the lead alloy pigs, when determined in accordance with 4.6, shall conform with Table I.

TABLE I. Chemical composition

Element	Analysis (%)
Antimony	5.0-7.0
Copper (max)	0.25
Other impurities (max total)	0.25
Lead	Remainder

3.2 Weight:

Each pig shall weigh from 25 to 100 pounds.

3.3 Workmanship:

The pigs shall be clean and of uniform composition, free from segregations, dross, oxides, foreign material, or other injurious defects.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for inspection:

Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance: All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections:

The examination and testing of the lead alloy pigs shall be quality conformance (acceptance) inspection as specified in this section.

4.3 Examination of product:

Each alloy pig shall be examined visually to determine apparent conformance with this specification with respect to the requirements for workmanship (3.3).

4.4 Sampling for chemical analysis:

One pig shall be selected from every ton or fraction thereof in a lot. For purposes of sampling, a lot shall consist of all pigs from the same cast from a single, homogeneous heat or melt of metal. Any addition of raw material to the heat or melt shall constitute a new lot.

4.5 Preparation of chemical analysis samples:

If more than one lot (4.4) is included in a shipment, each lot shall be sampled and analyzed separately. For each lot, the sample pigs selected for tests shall be broken so as to present a clean fracture over the cross section of the pigs. One-half of each pig shall have drillings taken from three points triangularly spaced on the clean part of the fracture. One of the three drilling points shall be located half way from the center of the cross section to the bottom of the pig; another point shall be located half way between the center of the cross section and a top corner of the pig. The other point shall be located half way between the center of the cross section and other top corner of the pig. An equal proportion of drillings shall be taken from each hole in each sample pig of the lot. These drillings shall be combined, thoroughly mixed, and an analysis shall be made from the mixed drillings. All drillings shall be fine, clean, dry, and free from foreign substances. Drillings shall be taken at slow speed and shall not be oxidized.

4.5.1 Chemical analysis: At least six (6) ounces of the mixed drillings shall be taken for chemical analysis. In case the first analysis shows that the material does not conform to the specification, a check analysis shall be made of the same mixed sample of drillings. The average of these analyses shall be final.