Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 3412B
Superseding AMS 3412A

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FLUX, ALUMINUM BRAZING

1. SCOPE:

1.1 Form: This specification covers an aluminum brazing flux in the form of powder.

1.2 Application: Primarily for brazing aluminum and aluminum alloys at temperatures of 1050°F (566°C) and above.

2. APPLICABLE DOCUMENTS: None.

3. TECHNICAL REQUIREMENTS:

3.1 Material: Flux shall be a finely ground and uniformly blended mixture, free of all substances which might adversely affect its serviceability. It shall contain not more than 5% water by weight.

3.1.1 Flux shall not harden in the container. A slight amount of agglomeration is permissible provided the lumps can be readily broken into a powder no coarser than the remainder of the material.

3.2 Properties:

3.2.1 Flux, mixed with water in the proportions of 3 to 1 by weight, with or without a suitable wetting agent, shall form a smooth paste, free from coarse particles, having acceptable fusibility and acceptable application and fluxing characteristics. Flux shall permit production of satisfactorily brazed joints of any type on applicable aluminum alloys when used in conjunction with aluminum brazing alloys.

3.2.2 On heating, flux shall fuse at 1050°F (566°C) or lower; on cooling from 1100°F (593°C) or higher, flux shall remain in the liquid state until the temperature drops to 1050°F (566°C) or lower.

3.2.3 Flux shall not produce, during use, a flame or smoke of sufficient intensity to obscure the work.

3.2.4 Flux shall not produce toxic or suffocating fumes under normal conditions of use.

3.2.5 Flux should be readily removed by water at 190°F (88°C) or hotter after being subjected to brazing operations. If the flux is not completely removed by the hot water but is removed by immersion in a 10% solution of nitric acid, to which 0.25% hydrofluric acid is added, for not more than 15 min. at not higher than 100°F (38°C), followed by a final rinse, the flux will be considered acceptable.

Ø 3.3 Quality: Flux shall be free from all substances which might affect its serviceability.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of flux shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.5. Purchaser reserves the right to perform such confirmatory testing as he deems necessary to assure that the flux conforms to the requirements of this specification.

4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this specification are classified as acceptance or routine control tests.

4.3 Sampling: At least one randomly selected sample of flux per batch shall be used for testing. A batch shall be all flux in an identifiable quantity processed at one time and presented for inspection at one time.

4.4 Approval:

4.4.1 Sample flux shall be approved by purchaser before flux for production use is supplied, unless such approval be waived. Results of tests on production flux shall be essentially equivalent to those on the approved sample.

4.4.2 Vendor shall use ingredients, manufacturing procedures, processes, and methods of inspection on production flux which are essentially the same as those used on the approved sample flux. If any change is necessary in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the revised materials and processing and, when requested, sample flux. No production flux made by the revised procedure shall be shipped prior to receipt of reapproval.

4.5 Reports: The vendor of flux shall furnish with each shipment three copies of a report stating that the flux conforms to the technical requirements of this specification. This report shall include the purchase order number, material specification number and its revision letter, batch number, date of manufacture, and quantity.

4.6 Resampling and Retesting: If any sample used in the above tests fails to meet the specified requirements, disposition of the flux may be based on the results of testing three additional samples for each original nonconforming sample. Failure of any retest sample to meet the specified requirements shall be cause for rejection of the flux represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Identification: Each package shall be permanently and legibly marked to give the following information:

FLUX, ALUMINUM BRAZING
AMS 3412B
PURCHASE ORDER NUMBER _____
MANUFACTURER'S NAME _____
MANUFACTURER'S DESIGNATION _____
BATCH NUMBER _____
DATE OF MANUFACTURE _____
DIRECTIONS FOR MIXING AND APPLICATION _____
WEIGHT OF CONTENTS _____

5.2 Packaging:

5.2.1 Flux shall be supplied in 4 oz (112 g), 8 oz (227 g), 16 oz (454 g), or 5 lb (2.27 kg) glass or plastic containers, as ordered.

5.2.2 Containers shall be prepared for shipment in accordance with commercial practice to assure carrier acceptance and safe transportation to the point of delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.

6. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.