

A-A-51145
July 18, 1985

COMMERCIAL ITEM DESCRIPTION
FLUX, SOLDERING, PASTE AND LIQUID

The General Services Administration has authorized the use of this commercial item description in preference to Federal Specification O-F-506C.

Scope and intended use. This description covers soldering flux of the standard commercial type which is intended to be used in soldering copper, copper-base alloys, tin plate, carbon steels, alloy steels, corrosion resistant steels, and chromium alloys.

Salient characteristics.

Classification. This description covers soldering fluxes of the following types and forms. The type and form to be furnished for a specific procurement shall be as specified in the contract or order.

Type I - For use with tin-lead solders for joining copper, copper-base alloys, tin plate, carbon steels, alloy steels, and corrosion resistant steels.

Form A - Paste.

Form B - Liquid.

Type II - For use in soldering chromium alloys.

Form B - Liquid.

Materials. The materials used in compounding the fluxes shall be of a quality necessary to produce a flux to meet the requirements specified herein.

Safety. The soldering fluxes shall not emit fumes in sufficient volume to become noxious when heated to soldering temperatures with ventilation equal to four air changes per hour.

Marking. Each container shall be permanently marked or labeled as to manufacturer and instructions for use.

FSC 3439

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Performance.

Type I, forms A and B. The type I flux shall be capable of protecting copper, copper-base alloys, tin plate, carbon steel, alloy steels, and corrosion-resistant steels from oxidation and be capable of reducing and dissolving a thin film of oxides which may be present. The form A flux shall be of uniform consistency, shall spread easily, and adhere uniformly. The form B flux shall wet easily and adhere to clean metal.

Type II, form B. The type II flux shall be capable of reducing chromium oxide surface films and shall be suitable for use in soldering chromium alloys. Form B flux shall wet easily and adhere to clean metal.

Measurement system. All dimensions in this description are given in US units. These measurements may be converted to SI units through the use of the conversion factors and methods specified in FED-STD-376.

Quality assurance provisions. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements specified herein. Except as otherwise specified in the contract, 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 inspections set forth in this description where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

Quality conformance. Unless otherwise specified, a soldering test shall be performed using a flux sample which is selected from the batch or batches used to fill the requirements of a specific contract. A batch is defined as all the flux of the same type and form produced from the same group of raw materials under essentially the same conditions.

Soldering test, type I, forms A and B. Test pieces 2 inches square shall be prepared from sheet copper, tin plate, and carbon steel. A surface of each of the test pieces shall be cleaned to a bright finish and coated with a thin film of the flux. A pool of SN 50 tin-lead solder conforming to QQ-S-571 shall be melted on the fluxed surfaces. No disagreeable fumes shall be evolved. The fluxed area shall be covered with a bright continuous tightly adhering coat of solder without porosity. A copper wire 0.0508 inch in diameter shall be soldered to the center of each piece of metal. Approximately 1/2 inch of wire shall be in contact with the test piece. Tension shall be applied to the wire until the wire breaks. Failure of the wire outside of the solder joint shall be indicative of an acceptable flux. Failure of the wire at the solder joint shall be cause for rejection of the flux.

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Soldering test, type II, form B. Three test pieces 2 inches square shall be prepared from sheet chromium alloy. A surface of each test piece shall be cleaned to a bright finish and coated with a thin film of flux. A pool of SN 50 tin-lead solder conforming to QQ-S-571 shall be melted on the fluxed surfaces. The fluxed area shall be covered with a bright continuous tightly adhering coat of solder without porosity. A copper wire 0.0508 inch in diameter shall be soldered to the center of each piece of metal. Approximately 1/2 inch of wire shall be in contact with the test piece. Tension shall be applied to the wire until the wire breaks. Failure of the wire outside of the solder joint shall be indicative of an acceptable flux. Failure of the wire at the solder joint shall be cause for rejection of the flux.

Preservation, packaging, packing, labeling, and marking. Unless otherwise specified in the contract or order, preservation, packaging, packing, labeling, and marking shall be in accordance with ASTM D 3951. When specified in the contract or order, preservation, packaging, packing, labeling, and marking shall be in accordance with MIL-W-45562, level as specified. Size of unit packages shall be as specified.

Notes. Acquisition documents should specify the following:

- a. Title, number, and date of this commercial item description.
- b. Quantity, type, and form required.
- c. If inspection is not required.
- d. If preservation, packaging, packing, labeling, and marking in accordance with MIL-W-45562 is required, specify level required.
- e. Size of unit package.

Federal Specification, QQ-S-571, "Solder, Tin Alloy: Tin-lead Alloy; and Lead Alloy", Federal Standard, FED-STD-376, "Preferred Metric Units for General Use by the Federal Government", and Military Specification, MIL-W-45562, "Welding and Soldering Equipment, Supplies, and Accessories, Packaging of," should be obtained from the contracting activity or as directed by the contracting officer.

American Society for Testing and Materials (ASTM) Standard D 3951, "Standard Practice for Commercial Packaging," is available from the American Society for Testing and Materials, 1916 Race St., Philadelphia, PA 19103.

Cross-reference data. The types and forms in this Commercial item description correspond to the types and forms as found in Federal Specification O-F-506C.

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MILITARY INTERESTS:

Custodians

Army - AL
Air Force - 99

Review Activities

Army - MI, EA
Air Force - 84
DLA - GS

User Activities

Army - AT
Navy - MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY

DLA - IP

Project 3439-0538

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER

CID A-A-51145

2. DOCUMENT TITLE

Flux, Soldering, Paste and Liquid

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

 VENDOR USER MANUFACTURER OTHER (Specify): _____

b. ADDRESS (Street, City, State, ZIP Code)

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER (Last, First, MI) - Optional

b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional

8. DATE OF SUBMISSION (YYMMDD)

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)