

MIL-M-58091A

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SUPERSEDING

MIL-M-58091(AV)

3 December 1970

## MILITARY SPECIFICATION

## MAINTENANCE KIT, ACRYLIC PLASTIC WINDOW REFINISHING, AIRCRAFT

This specification is mandatory for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 This specification covers one type and class of kit to restore optical clarity to lightly scratched or scuffed transparent acrylic panels.

## 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein:

## SPECIFICATIONS

## FEDERAL

L-P-378	Plastic Sheet and Strip (Polyolefin)
P-P-101	Paper, Abrasive, Artificial, Waterproof
P-P-560	Polish, Plastic
U-T-30	Talcum Powder; Plain
UU-T-598	Towel, Paper; (Plastic-Wiping)
PPP-B-601	Boxes, Wood, Cleated-Plywood
PPP-B-636	Box, Fiberboard

## MILITARY

MIL-P-116	Preservation, Methods of
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## STANDARD

## MILITARY

MIL-STD-129	Marking for Shipment and Storage
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(Copies of specifications and standard required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

FSC 1560

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2.2 Other publication.--The following document forms a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS

D 1056

Tentative Specifications and Methods of Testing  
Sponge and Expanded Cellular Rubber Products

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.)

### 3. REQUIREMENTS

3.1 First article.--Unless otherwise specified (see 6.2), this specification requires first-article testing and approval in accordance with 4.2.1. The first articles may be either preproduction samples or initial production models which conform to this specification. In either case the production item shall be identical with the first articles submitted for approval. Approval of the first articles shall not relieve the supplier of the responsibility to furnish a product in accordance with the terms of the contract.

3.2 Kit components.--Each kit shall consist of the components specified herein, and in the quantities indicated. (The specific commercial products listed should not be considered as mandatory; they are for reference only and any equivalent product is acceptable.)

<u>Abrasive paper:</u>	Six sheets conforming to P-P-101, in 3- by 5-1/2-inch size. Two sheets in each of the following grit sizes: 320, 400, and 600.
<u>Abrasive cloth:</u>	Six sheets of cushioned abrasive, Polysand type A (see 6.4) in 3- by 6-inch size. One sheet in each of the following grades: 2400, 3200, 3600, 4000, 6000, and 8000.
<u>Plastic polish:</u>	One 1-ounce container of plastic polish conforming to P-P-560, type 1 (liquid).
<u>Detergent:</u>	One 1-ounce container of a nonflammable, non-abrasive, concentrate/biodegradable liquid cleaning agent, such as Amway Corporation "L.O.C."
<u>Talcum:</u>	One 1/2-ounce container of talcum powder conforming to U-T-30.

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<u>Towels:</u>	Five towels conforming to UU-T-598.
<u>Neoprene block:</u>	One closed-cellular neoprene block, medium swell type (ASTM D 1056, grade SCE 42), such as Rubatex Corporation stock No. R-425-N. The block shall be 3 by 4 inches by 1-inch thick.
<u>Cardboard backing block:</u>	Two 3- by 4-inch cardboard blocks, 1/16-inch thick, of pasted chip construction, to provide a backing for the abrasive paper when used with the neoprene block. Surface of blocks shall be flat and free of any imperfections such as folds or creases.
<u>Instruction sheet:</u>	In each kit, a list of components and an instruction sheet giving concise, step-by-step procedures for use of components.
<u>Container:</u>	Container for complete kit assembly shall be approximately 7 by 4 by 3 inches. Container shall conform to type CF, class domestic, variety SW, style FPF of PPP-B-636.

3.3 Examination and performance.--The kit shall satisfy a visual examination of product (4.3.1) and perform satisfactorily when submitted to the test specified in 4.3.2.

3.4 Workmanship.--Each component of the kit shall be free of any defect which could affect proper functioning for its intended purpose.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.--Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 supplies and services conform to prescribed requirements.

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4.2 Classification of inspections.--The inspections specified herein are classified as follows: (1) first article (see 4.2.1) and (2) quality conformance (see 4.2.2).

4.2.1 First article.--Unless otherwise specified (see 6.2), two kits (see 3.1) shall be subjected to all examinations and tests specified herein. Failure of either kit to pass all examinations and tests shall be cause for rejection.

4.2.2 Quality conformance.--Quality conformance inspection shall consist of satisfactory compliance of one sample kit, selected at random from each lot of 25 kits, or any fraction thereof, supplied under one contract, under essentially the same conditions. The sample shall be examined as specified in 4.3.1 and 4.4. Any defect found shall be cause for rejection of the lot.

4.3 Examination and test.--

4.3.1 Examination of product.--Each kit shall be examined visually for the following:

- (a) Components      Completeness of the boxed assembly (see 3.2); Dimensions as specified (see 3.2).
- (b) Materials      Material as specified for each component (see 3.2).
- (c) Workmanship    External and internal surfaces free from any foreign matter. Components free from any imperfection which could affect proper functioning (see 3.4).
- (d) Packaging      Incorrect or illegible marking (see 5.3). Damaged container or improper sealing (see section 5).

4.3.2 Service test.--Each kit selected in accordance with 4.2.1 shall be subjected to a practical service test. Two transparent acrylic plastic panels shall be used: One for the performance test, the other for visual comparison. The procedure shall be as follows:

- (a) Remove protective covering from one side of the test panel and lightly scratch or scuff approximately 1 square foot area with the grit paper size 600 from the sample kit.
- (b) Using the procedures outlined on the instruction sheet, restore the optical quality of the damaged panel. Determine the

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clarity or apparent distortion by holding the panel 24 to 30 inches away from the eyes and looking at an object having parallel lines (such as window frame, brick wall, etc.) 30 to 50 feet away.

- (c) Move the panel slowly through at least 45 degrees vertical and horizontal directions, to determine clarity, shape, and position through all movements. (Straight objects should not curve or break pattern. If moving the panel is impracticable, then a slow movement of the head will accomplish the same result, if the panel is held steady.)
- (d) Remove the protective covering from the second panel, and compare the two test panels. There shall be no apparent loss of clarity, or any distortion in the restored panel. If distortion appears, repeat step (b) as necessary.

Failure of the kit to restore optical quality shall be cause for rejection (see 4.2.1).

4.4 Inspection of preparation for delivery.--Preservation and packaging, and marking of each complete kit shall be examined to determine compliance with section 5 of this specification.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging.--Preservation and packaging shall be level A or C, as specified (see 6.2).

5.1.1 Level A.--Kits shall be individually preserved and packaged in accordance with method IC-2 of MIL-P-116, utilizing heat-sealed polyethylene bags of material conforming to L-P-378.

5.1.2 Level C.--Kits shall be preserved and packaged in a manner to insure adequate protection against deterioration and damage during shipment from the supply source to the first receiving activity.

5.2 Packing.--Packing shall be level A, B, or C, as specified (see 6.2).

5.2.1 Level A.--Kits preserved and packaged as specified in 5.1.1 shall be packed for shipment in cleated-plywood containers conforming to PPP-B-601, oversea type. Boxes shall be closed and strapped in accordance with the box specification.

5.2.2 Level B.--Kits preserved and packaged as specified in 5.1.1 shall be packed for shipment in fiberboard boxes conforming to PPP-B-636, class weather-resistant.

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5.2.3 Level C.--Kits shall be packed in exterior-type shipping containers in a manner to insure safe transportation at the lowest rate to the point of delivery, and shall meet, as a minimum, the requirements of the rules and regulations applicable to the mode of transportation selected.

5.3 Marking for shipment.--All individual packages and shipping containers shall be marked in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use.--The kit is intended for the convenient and immediate use, on site, for the removal of light scratch or scuff damage to aircraft windows and windshields fabricated from transparent acrylic panels.

6.2 Ordering data.--Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Quantity of kits desired.
- (c) Whether first-article tests are required (see 3.1).
- (d) Levels of packaging and packing required (see 5.1 and 5.2).

6.3 Instructions for first-article approval.--When first-article approval is required (see 3.1 and 6.2), the solicitation and resulting contract should include information concerning examination, test, and approval in accordance with the applicable requirements of Section I, Part 19 of the Armed Services Procurement Regulation.

6.4 Polysand abrasive.--The cushioned abrasive cloth specified as a part of this kit (see 3.2) is covered by US Patent Number 3230672 which expires January 25, 1983. The Government does not have a royalty free license. The product is known by the term "Elastomeric", in which the abrasive particles are bonded with their flat sides oriented outward to the working surface.

### Custodian:

Army -- AV  
Navy -- AS  
Air Force -- 11

### Review Activities:

Army --  
Navy --  
Air Force -- 84

### User Activities:

### Preparing Activity:

Army -- AV

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