

Aircraft Material Specification
CLEANING MATERIAL FOR METAL

NOTE 1.—This specification is one of a series issued by the Ministry of Supply either to meet a limited requirement not covered by any existing British Standard or to serve as a basis for the inspection of materials, the properties and uses of which are not sufficiently developed to warrant submission to the British Standards Institution for standardisation.

NOTE 2.—Specification D.E.F./1053 Standard Methods of Testing Paint, Varnish, Lacquer and related Products is published for the Ministry of Defence by H.M.S.O. and is on sale to the public.

NOTE 3.—Points of difference from D.T.D. 756A are indicated by marginal lines.

1. Description

- (a) This specification covers the requirements for materials to be used for removing dirt, grease, oil, paints, dopes, varnishes and other organic contaminants or protectives from the surfaces of metals.
(b) The material, together with the contaminants, shall be capable of ready removal by cold water from the surfaces to which it is applied.

MINISTRY OF AVIATION

D.T.D. 756B

Amendment List No. 1

May, 1961

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Clause 1 (a) Add "The material may be supplied, if required, with a precleaner to be used before the cleaning material proper for the removal of loose or readily soluble contamination. The precleaner shall comply in all respects with the requirements of this specification with the exception of the flash point and the cleaning power".

Appendix III After "Aluminium alloy"
delete "pickled etc". to end of line.
insert "chromate dipped as in para. 5 (b) (ii) of Method No. 2 of specification DEF-1053".
After "Magnesium"
delete "Magnesium Manganese Alloy Sheet Specification D.T.D.118A"
insert "Magnesium Zinc Zirconium Alloy Sheet Specification D.T.D.626"
After "Steel"
delete "cold rolled, close annealed"
insert "EN2A quality".

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deposits. ... of the edges of surfaces or formation of adherent

6. Stability

When prepared in accordance with the manufacturer's instructions for use and maintained at the working temperature, the material shall remain as a solution or stable emulsion. If it is normally used hot but separates on cooling (e.g. overnight) it shall be capable of easy restoration to its original condition by reheating to the working temperature and gently stirring.

7. "Instructions for Use" and "Warning" Labels

- (i) Before any manufacturer's material is supplied against this specification, details of the formulation and copies of the manufacturer's proposed "Instructions for Use" and avoidance of health hazards as necessary shall be submitted for approval to the Director of Aeronautical Inspection (I.N.M.I.), Harefield House, Harefield, Middlesex. An agreed "Instructions for Use" label shall be attached to each container of the material.
(ii) Where the material contains inflammable solvents and/or methylene chloride a "Warning" label shall be attached to each container of the material. "Warning" labels shall be printed in red letters 1/2 inch high, worded as follows:—

CONTAINS
ENSURE ADEQUATE VENTILATION
NO SMOKING

(Foot note—A viscosity of 75-85 Krebs units at 15°C as determined by means of a Krebs Stormer Viscometer has been found to be appropriate).

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1. Description

- (a) This specification covers the requirements for materials to be used for removing dirt, grease, oil, paints, dopes, varnishes and other organic contaminants or protectives from the surfaces of metals.
- (b) The material, together with the contaminants, shall be capable of ready removal by cold water from the surfaces to which it is applied.
- (c) The material shall be free from abrasive matter.
- (d) The material shall be supplied in one or other of the following types according to the proposed method of use—
 - (i) brushing (or swabbing),
 - (ii) spraying,
 - (iii) dipping.

The type to be supplied shall be stated on the order which shall also state if methylene chloride containing material is acceptable.

- (e) The ingredients shall comply with the requirements of relevant B.S., D.E.F. or D.T.D. specifications where available.

Flash point

The flash point of the material shall be not lower than 130°F., when tested by Method 5 B of Specification D.E.F./1053.

Viscosity

The viscosity of the brushing and spraying types of material described in Clause 1 (d), (i) and (ii) above shall be such that the material prepared in accordance with the manufacturer's instructions will not run from vertical surfaces when applied liberally and allowed to stand for not less than 15 minutes at room temperature. (See foot note)

Cleaning Power

The material when prepared in accordance with the manufacturer's instructions and tested by the appropriate method in Appendix II shall clean completely the standard panels described in Appendix I down to bare metal.

Freedom from Corrosive Action

The freedom from corrosive action of the material shall be such that, when determined by the method described in Appendix III the metal strips shall show no increase in weight and shall not decrease in weight by more than 5 mg. There shall be no signs of corrosion such as pitting of the edges or surfaces or formation of adherent deposits.

6. Stability

When prepared in accordance with the manufacturer's instructions for use and maintained at the working temperature, the material shall remain as a solution or stable emulsion. If it is normally used hot but separates on cooling (e.g. overnight) it shall be capable of easy restoration to its original condition by reheating to the working temperature and gently stirring.

7. "Instructions for Use" and "Warning" Labels

- (i) Before any manufacturer's material is supplied against this specification, details of the formulation and copies of the manufacturer's proposed "Instructions for Use" and avoidance of health hazards as necessary shall be submitted for approval to the Director of Aeronautical Inspection (I.N.M.I.), Harefield House, Harefield, Middlesex. An agreed "Instructions for Use" label shall be attached to each container of the material.
- (ii) Where the material contains inflammable solvents and/or methylene chloride a "Warning" label shall be attached to each container of the material. "Warning" labels shall be printed in red letters $\frac{1}{2}$ inch high, worded as follows:—

CONTAINS _____
ENSURE ADEQUATE VENTILATION
NO SMOKING

(Foot note—A viscosity of 75-85 Krebs units at 15°C as determined by means of a Krebs Stormer Viscometer has been found to be appropriate).

8. Keeping Qualities

The material shall still comply with the requirements of this specification when stored under ordinary conditions in its original closed containers for not less than the following periods after the date of delivery which shall be marked on the containers.

- (a) Two years in temperate climates.
- (b) One year in tropical climates.

APPENDIX I

Method for the Preparation of Standard Panels for the Determination of Cleaning Power

Panels of smooth (i.e. unabrased) hard aluminium pretreated in accordance with Method No. 2, para. 5(a) (ii) and (b) (ii) of Specification D.E.F./1053 shall be coated with High Gloss Cellulose Finishing Scheme (including filler) to Specification D.T.D. 772 latest issue and allowed to dry at room temperature for seven days.

Panels of burnished steel cleaned by Method No. 2, para. 2 of Specification D.E.F./1053 shall be coated with Stoving Enamel to Specification D.T.D. 56 latest issue and allowed to cool at room temperature for one hour.

All the painted surfaces shall then be smeared with a thin film approximately 0.001 inch thick of a mixture of equal parts of engine lubricating oil to Specification D.E.D. 2472 B/O and boiled linseed oil. The panels shall then be heated at 98°C. to 100°C. for one hour and allowed to cool to room temperature.

APPENDIX II

Methods for the Determination of Cleaning Power

- (a) **Brushing & Spraying Type**—Panels prepared by the method described in Appendix I shall be coated with the material prepared in accordance with the manufacturer's instructions and allowed to hang vertically at room temperature for 30 minutes. The panel shall then be washed with cold water, swabbing gently with cotton wool if necessary.
- (b) **Dipping Type**—Panels prepared by the method described in Appendix I shall be completely immersed, each in a separate portion of the material prepared in accordance with the manufacturer's instructions. The time of immersion shall be not longer than 1 hour. The panels shall be withdrawn and washed with cold water, swabbing gently with cotton wool if necessary.

APPENDIX III

Method for the Determination of Freedom from Corrosive Action

A quantity of the material shall be prepared in accordance with the manufacturer's instructions and heated if necessary to attain the working temperature. The material shall be divided into an appropriate number of separate portions.

Unused strips of the metals listed below, each approximately 3 inches × 1 inch × 20 s.w.g. shall be cleaned in acetone A.R., dried and weighed. They shall then be completely immersed, each in a separate portion of the material prepared as above.

The test solutions with the immersed strips shall be maintained at the working temperature for 2 hours, then allowed to cool if necessary to room temperature and the immersion continued undisturbed at room temperature for a total period of 168 hours.

Aluminium alloy	..	B.S. L.70 Shot Blasted
Magnesium alloy	..	Magnesium manganese alloy sheet specification D.T.D. 118A chromated to Specification D.T.D. 911A.
Copper	..	B.S.899
Steel	..	B.S.S.84 cold rolled, close annealed, polished with No. 0 Emery Paper, cleaned with pure toluol B.S. 805
Steel	..	Cadmium plated to D.T.D. 904

The strips shall then be removed from the liquid, washed in clean cold water, dried, weighed and examined visually. No attempt shall be made to remove corrosion products from the strips before weighing at this stage.

Approved for issue

H. SUTTON,

Director of Materials Research and Development (Air).

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