

METRIC

A-A-59921
01 April 2013
SUPERSEDING
MIL-C-43616C
18 March 1981

COMMERCIAL ITEM DESCRIPTION

CLEANING COMPOUNDS, AIRCRAFT SURFACE

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-C-43616C for all federal agencies.

1. **SCOPE.** This commercial item description covers the requirements for aerosol class aircraft surface cleaning compounds.
2. **CLASSIFICATION.** The aircraft surface cleaning compounds covered by this specification shall be of the following class:

Class 1A – Aerosol (MIL-C-43616)

3. SALIENT CHARACTERISTICS

- 3.1 **General.** The cleaning compound shall be a homogenous liquid free of foreign matter, and be capable of removing soil from aircraft surfaces without causing streaking, fading, or blistering of aircraft paint systems.
- 3.2 **Composition.** The composition of the cleaning compound shall be optional with the manufacturer, but shall be restricted by the requirements of this commercial item description (CID).
- 3.3 **Physical and chemical properties.** The cleaning compound shall conform to the requirements of [table I](#) and [2.4](#) through [2.4.11](#).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Logistics Agency - Aviation, ATTN: DLA Aviation-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <https://assist.dla.mil>.

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Table I. Physical and Chemical Properties

Characteristics	Requirements	
	Min.	Max.
pH value at 25°C	8	10
Insoluble matter, percent	--	0.1
Nonvolatile matter, percent	21	--
Tag closed cup flash point, °F	142	--
Biodegradability of surfactant present, percent	90	--

3.4 Performance. The cleaning compound shall foam, adhere, and clean at least as effectively as the control formula (see [table II](#)) similarly packaged when both are tested.

Table II. Control Formula

Ingredients	Percent by Weight
Water	20.8
Tetrapyropotassium phosphate	2.5
Sodium metasilicate (Na ₂ SiO ₃ ·5H ₂ O)	0.7
Potassium Chromate	0.1
Ethylene Glycol Monobutyl Ether	5.0
Potassium Hydroxide (45 percent by weight)	4.2
Oleic Acid	8.3
(Mix above ingredients in the order given. Check pH. Adjust the pH to 9.0 + 0.5 with Potassium Hydroxide or Oleic Acid, if required.)	
Solvesso 150	41.7
Cyclohexanol	2.8
Monoethanolamine	6.7
Dodecyl Benzene Sulfonic Acid (98%)	7.2
(Adjust pH to 8-11 with Potassium Hydroxide, if necessary)	

3.4.1 Effect on painted surfaces. The cleaning compound shall cause no streaking, fading, or blistering of the aircraft paint system and shall not cause a decrease of surface hardness greater than one pencil in accordance with ASTM F502-08.

3.4.2 Temperature stability. The cleaning compound shall not layer or separate when observed at a temperature of 60 ± 2°C (140 ± 4°F) for six hours. Likewise, the cleaning compound shall be homogenous when observed at a temperature of -18 ± 5°C (0 ± 9°F) for one hour.

3.4.3 Hard water stability. When a 1:9 dilution with 10 grain hard water is performed, the cleaning compound shall show no signs of separation.

3.4.4 Emulsibility. When mixed with water, the cleaning compound shall form a homogenous emulsion. It shall not show any free solvent and no more than 2 ml of free water.

3.4.5 Corrosiveness. Aluminum alloy, clad aluminum alloy, magnesium alloy, titanium alloy, polished aluminum alloy, steel and cadmium plated steel shall show no trace of corrosion.

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3.4.6 Effect on acrylic base plastics. The cleaning compound shall cause no crazing or cracking of stressed acrylic plastic.

3.4.7 Corrosion between the faying surfaces. There shall be no corrosion between faying surfaces of clad aluminum.

3.4.8 Effect on salt-coated surfaces. The cleaning compound, when applied to a salt-coated surface, shall result in no non-rinsable film.

3.4.9 Accelerated storage stability. The aged sample of cleaning compound shall show no marked change in color and uniformity, nor shall it pit, corrode or cause uneven darkening of steel surfaces, and shall give a soil removal value not less than 95% of that which is obtained with the unaged cleaning compound.

3.4.10 Storage stability. After storage of 6 months, the cleaning compound shall not separate, crystallize or deteriorate, affect the metal strip, show any evidence of incompatibility, nor shall the storage container show any evidence of distortion, leakage, or internal corrosion. The stored cleaning compound shall then meet the requirements of this specification, except that the cleaning compound shall give a removal value not less than 95% of that which is obtained with the unaged cleaning compound.

3.4.11 Homogeneity. The cleaning compound, when allowed to stand undisturbed for 72 hours, shall be a clear liquid showing no separated solids or phase separation. A faint turbidity shall not be considered objectionable.

4. REGULATORY REQUIREMENTS

4.1 Material safety data sheets (MSDS). Manufacturers shall prepare and submit a MSDS in accordance with FED-STD-313, "Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities" and meeting the Code of Federal Regulations (CFR) requirements of 29 CFR 1910.1200, "Hazard Communication."

4.2 Toxicity. The cleaning compound shall have no adverse effect on the health of personnel when used for its intended purpose. The manufacturer shall certify that the cleaning compound contains no substance known to be toxic to the user under normal conditions of use.

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections, examinations, and tests.

5.2 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The product offered must have been previously sold either to the government or on the commercial market.

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6. PACKAGING

6.1 Packaging. Unless otherwise specified in the contract or order, the cleaning compound shall be packaged in 16-oz pressurized containers conforming to type IX, class 2 of PPP-C-96. All internal surfaces of the containers shall be lined with a material that will not affect nor be affected by the cleaning compound. The valve shall be equal or equivalent in performance to Newman-Green No R-10-123 with a 6-3/16 in stem. The activator head shall be equal or equivalent in performance to New-Green No. 150-25-18. The containers shall conform to applicable requirements of the Code of Federal Regulations, Title 49, Parts 100-199. Preservation and marking shall be as specified in the contract or order.

6.2 Composition. The content of the pressurized can shall be composed of the following:

- a. Cleaning compound - 92 percent
- b. Propellant - 8 percent A46 hydrocarbon (85 percent isobutane and 15 percent propane)

6.3 Leakage. When the cleaning compound is packaged in pressurized cans, the cans shall not leak nor become distorted.

6.4 Net Weight. When tested for weight, the content of the pressurized can shall weigh a minimum of 13.0 ounces.

7. NOTES

7.1 Sources of documents.

7.1.1 Military specifications and standards. Copies of military specifications and standards may be obtained from Standardization Documents Order Desk, 7000 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Electronic copies of military specifications and standards may be obtained from <https://assist.dla.mil/>

7.1.1 CFR. Copies of CFR may be obtained from the superintendent of documents P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of CFR documents may be obtained from <http://www.access.gpo.gov/>.

7.1.2 FAR. The FAR may be obtained from the US Government Printing Office, 732 North Capitol Street N.W., Washington, DC 20401. Electronic copies of FAR documents may be obtained from <http://www.acquisition.gov/far/>

7.1.2 ASTM standards. Copies of ASTM standards may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies of ASTM standards may be obtained from <http://www.astm.org/>.

7.2 Subject term (key word) listing.

Aerosol
Aircraft
Cleaning
Surface

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MILITARY INTERESTS:

Custodians:

Army - GL

Air Force - 68

Review Activities:

Army – AV, EA, MD, MR

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA – GS3

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