

**METRIC**

MIL-C-38736B

23 February 1984

Superseding

MIL-C-38736A

1 April 1977

## MILITARY SPECIFICATION

## CLEANING COMPOUND, SOLVENT MIXTURES (METRIC)

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

## 1. SCOPE

1.1 Scope. This specification covers two blends of mixed cleaning solvent for use in final cleaning of metal surfaces and solvent resistant coatings prior to application of integral fuel tank sealants.

TYPE I - Normal Solvent Blend

TYPE II - Non-Photochemically Reactive Solvent Blend

## 2. APPLICABLE DOCUMENTS

2.1 Government Documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

## SPECIFICATIONS:

Federal

TT-E-751	Ethyl Acetate, Technical
TT-I-735	Isopropyl Alcohol
TT-M-261	Methyl Ethyl Ketone
TT-N-97	Naptha, Aromatic
TT-T-548	Toluene, Technical
PPP-C-2020	Chemicals, Liquid, Dry and Paste Packaging

## STANDARDS

Federal

FED-STD-313                      Material Safety Data Sheets, Preparation and the Submission of

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: SA-ALC/SFRM, Kelly AFB TX 78241, by using the self-addressed Standardization Document Improvement proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 6850

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Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-109	Quality Assurance Terms and Definitions
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-147	Palletized Unit Loads

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other Publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS

## ASTM STANDARDS

D 1658	Aromatic Content of Naphthas, Carbon Number Distribution by Mass Spectrometry
D 2109	Non-Volatile Matter in Halogenated Organic Solvents and Their Admixtures
D 3051	Practice for Commercial Packaging

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

## UNIFORM CLASSIFICATION COMMITTEE, AGENT

## Uniform Freight Classification Rules

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago IL 60606.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

## 3. REQUIREMENTS

3.1 Solvent Blend Composition. The composition of the cleaning compound solvent blends for each type shall be in accordance with Table I.

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Components	Specification	Percent by Volume	
		Type I	Type II
Aromatic Naphtha	TT-N-97 Type I, Grade B	50±2.0	None
Ethyl Acetate	TT-E-751	20±1.0	35.5±1.0
Methyl Ethyl Ketone	TT-M-261	20±1.0	36±1.0
Isopropanol	TT-I-735	10±1.0	10±1.0
Toluene	TT-T-548	None	18.5±1.5

3.2 Chemical Components. The supplier/vendor shall furnish to the procuring activity certified laboratory test results showing that the chemical components used in the formulation exceed all requirements per the applicable specification. Type II solvent mixture only shall be a non-photochemically reactive solvent blend. A non-photochemically reactive solvent is any solvent with an aggregate of less than 20 percent of its total volume composed of the following percentage composition limitations, referred to the total volume of solvent.

a. A combination of hydrocarbons, alcohols, aldehydes, esters, ethers or ketones having an olefinic or cycloolefinic type of unsaturation: 5%.

b. A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethyl benzene: 8%.

c. A combination of ethyl benzene, ketones having branched structures, trichloroethylene or toluene: Less than 20%.

d. Total (a) + (b) + (c): Less than 20%.

3.3 Workmanship. The solvent compound mixtures shall be water-white color and manufactured from specification-certified materials which upon being combined and processed will produce high quality cleaning solvent mixtures.

3.4 Aromatic Content. Aromatic content shall not exceed 50±2.0% for Type I when tested per 4.3.3.

3.5 Non-Volatile Residue. Non-volatile residue shall not exceed 0.0010% by weight when tested per 4.3.4 (both types).

#### 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 Quality Conformance Inspection.

4.2.1 Lot. A lot shall consist of all the cleaning compound produced by one manufacturer, at one plant, from the same materials and under essentially the same conditions provided the batch operation is continuous. In the event the process is a batch operation, each batch shall constitute a lot.

4.2.2 Sampling. Sampling shall be done in accordance with MIL-STD-105.

4.2.3 Testing. Samples selected in accordance with 4.2.2 shall be tested as specified in 4.3. Failure of any tests by either sample shall be cause for rejection of the lot from which the samples were taken.

#### 4.3 Tests.

4.3.1 Workmanship. The cleaning compound shall comply with paragraph 3.3 for both types.

4.3.2 Chemical Components. The various chemical components shall comply fully with their applicable specification as listed in Table I.

4.3.3 Aromatic Content. For Type I Aromatic content shall be tested per ASTM D 1658.

4.3.4 Non-Volatile Residue. Non-volatile residue shall be analyzed per ASTM D 2109, Method A.

4.4 Inspection of Preparation for Delivery. The packing and marking shall be examined to determine conformance to section 5 of this document.

4.4.1 Examination for Fill. An examination shall be made to determine the fill of the primary container. The sample unit shall be one primary container. Sampling shall be performed in accordance with MIL-STD-105. The inspection level shall be S-2 or a minimum of five sample units randomly selected from the lot. The unit quantity per container shall not be less than 0.5 percent or more than 1.0 percent of the specified quantity. The average net contents shall not be less than the contract quantity. The AQL for uniformity of weight shall be 4.0 expressed as defects per hundred units.

4.4.2 Inspection of Packaging. An inspection of packaging shall be performed to determine compliance with specified requirements. Sampling shall be in accordance with MIL-STD-105, Level S-2, and the AQL shall be 4.0, expressed as defects per hundred units.

4.5 Non-Photochemically Reactive Solvent Certification. The manufacturer/supplier shall certify that type II solvent blend only is non-photochemically reactive.

#### 5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be Level A or Industrial (See 6.2).

5.1.1 Level A. Packaging shall be in a DOT 17C steel container of appropriate size in accordance with PPP-C-2020, Table I.

5.1.2 Industrial. Packaging shall be in accordance with ASTM D 3951.

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5.2 Packing. No further packing is required if packaged per 5.1.

5.3 Markings. Markings shall be in accordance with MIL-STD-129. On Type II product only all containers shall be labeled or marked "Non-Photochemically Reactive."

5.4 Palletization. Palletization when required shall be in accordance with MIL-STD-147.

5.5 Additional Markings. The following information shall be marked on each container:

Storage Life is Eighteen Months When Stored in Original Unopened Containers Below 36.7°C. Material is Hygroscopic and Should be Stored in Dry, Covered Storage Areas.

6. NOTES

6.1 Intended Use. The cleaning solvent type mixtures covered by this specification are intended for cleaning chemically treated aluminum alloy surfaces prior to applying MIL-C-27725 coating in accordance with MIL-A-38267 (USAF) and MIL-S-8802 sealant. The solvents may also be used for final cleaning prior to applying chemical treatment using MIL-C-5541.

6.2 Ordering Data. Procurements shall specify the following:

- (a) Title, number, and date of this specification.
- (b) Type solvent mixture required.
- (c) Type and size of container required.
- (d) Level of packaging/packing required.
- (e) Special markings, if required.
- (f) Palletization, as required.

Custodian:  
Air Force - 68

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Reviewer  
DLA - GS

Project No. 6850-F745

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-38736B		2. DOCUMENT TITLE Cleaning Compound, Solvent Mixture (Metric)	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM ANALYSIS			
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)	

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DD FORM 1426  
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**NOTE** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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