

INCH-POUND

MIL-M-9950A (MI)  
20 March 1992  
SUPERSEDING  
MIL-M-9950 (USAF)  
3 May 1962

## MILITARY SPECIFICATION

MISSILE COMPONENTS, LIQUID OXYGEN, LIQUID NITROGEN,  
GASEOUS OXYGEN, GASEOUS NITROGEN, INSTRUMENT AIR,  
HELIUM AND FUEL HANDLING SYSTEMS; CLEANING AND  
PACKAGING FOR DELIVERY

This specification is approved for use by the U.S. Army Missile Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

### 1. SCOPE

1.1 Scope. This specification describes the cleaning and packaging for delivery of individual components of liquid oxygen (LOX), liquid nitrogen, and service gas handling systems of the airborne and launch site ground systems of all missiles using LOX or kerosene propellant rocket engine fuel. It is not intended for use with components of upstream support equipment such as transporters, oxygen/nitrogen generators, and the like.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5270 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A  
DISTRIBUTION STATEMENT A.  
distribution is unlimited.

FSC 14GP  
Approved for public release;

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## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

## FEDERAL

L-P-378	-	Plastic, Sheet and Strip, Thin Gauge, Polyolefin
PPP-B-576	-	Boxes, Wood, Cleated, Veneer, Paper Overlaid
PPP-B-591	-	Boxes, Fiberboard, Wood-Cleated
PPP-B-601	-	Boxes, Wood, Cleated-Plywood
PPP-B-621	-	Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	-	Boxes, Shipping, Fiberboard
PPP-B-640	-	Boxes, Fiberboard, Corrugated, Triple-Wall

## MILITARY

MIL-C-104	-	Crates, Wood: Lumber and Plywood Sheathed, Nailed and Bolted
MIL-P-116	-	Preservation, Methods of
MIL-L-10547	-	Liners, Case, and Sheet, Overwrap; Water-Vaporproof or Waterproof, Flexible
MIL-P-25576	-	Propellant, Kerosene
MIL-P-27401	-	Propellant, Pressurizing Agent, Nitrogen
MIL-C-81302	-	Cleaning Compound, Solvent, Trichlorotrifluoroethane

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## STANDARDS

## FEDERAL

FED-STD-209 - Cleaning Room and Work Station  
Requirements, Controlled Environment

## MILITARY

MIL-STD-129 - Marking for Shipment and storage  
MIL-STD-889 - Dissimilar Metals  
MIL-STD-1190 - Minimum Guidelines for Level C  
Preservation, Packing and Marking  
MIL-STD-2073-1 - DOD Materiel, Procedures for  
Development and Application of  
Packaging Requirements

(Unless otherwise indicated, copies of the federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Ave., Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

## COMPRESSED GAS ASSOCIATION, INC.

CGA G-9.1 - Commodity Specification for Helium

(Application for copies should be made to the Compressed Gas Association, Inc., 1235 Jefferson Davis Highway, Arlington, VA 22202.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document,

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however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Cleaning requirements. Cleanliness of components shall be verified by the procedures of Inspection Nos. 1, 2 and 3 as specified in 4.2. Whenever possible, Inspection No. 1 using the solvent rinse method shall be used for detecting particle size and quantity. Inspection No. 4 as specified in 4.2.4 shall be resorted to as a means of inspection only in those instances where Inspection Nos. 1 and 3 are impossible or impractical. If a component fails to pass inspection, the component shall be recleaned. Inspection No. 5 as specified in 4.2.5 shall be conducted as a referee inspection, by depot or other qualified testing agency, where the level of hydrocarbon contamination is questioned after completion of Inspection No. 3 or No. 4. Only components of LOX, gaseous nitrogen ( $GN_2$ ), and helium systems will be inspected for hydrocarbon contamination. Total hydrocarbon contamination permitted shall be as specified in Inspection No. 5.

### 3.2 Permissible contamination limits for all components.

3.2.1 Wipe tests. Cleanliness determined by wipe tests immediately after cleaning or prior to packaging installation shall be in accordance with the following:

- a. No particles measuring greater than 300 microns in size
- b. No fibers measuring greater than 40 microns in diameter x 4000 microns in length
- c. No hydrocarbons (see 4.2.3).

### 3.2.2 Cleanliness determined by flush or solvent rinse tests.

3.2.2.1 LOX and kerosene propellant. Cleanliness shall be in accordance with the limits shown in table I.

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TABLE I. Cleanliness limits for LOX and kerosene propellants.

Contaminant	Size (Microns)	Number
Solid particles	300 - 500	25 per square foot
	500 - 1000	5 per square foot
	>1000	None
Fibers	750 - 2000 length	50 per square foot
	2000 - 6000 length	5 per square foot
	>6000 length	None
Total solids and fibers: 5.0 milligrams per square foot		

3.2.2.2 Gaseous nitrogen, instrument air and helium.

Cleanliness shall be in accordance with the limits shown in table II.

TABLE II. Cleanliness limits for gaseous nitrogen, instrument air and helium.

Contaminant	Size (Microns)	Number
Solid particles	300 - 500	15 per square foot
	>500	None
Fibers	>2000 length	None
Total solids and fibers: 2.0 milligrams per square foot		

3.3 Preservation.

3.3.1 Contamination barrier. A contamination barrier as specified herein is a bag, wrap, seal, blind flange, or other device used to prevent contamination of cleaned surfaces due to handling, airborne foreign matter, or later contact with unclean surfaces such as packaging materials.

3.3.2 Contamination barrier material. Polyethylene used as a contamination barrier material shall conform to L-P-378, not less than 4 mils thick. Other materials or methods may be used as a contamination barrier if they provide equal protection against contamination and are approved for use by the procuring activity. All packaging, padding and sealing materials used in fabrication of the contamination barrier shall be maintained free of contamination in excess of that allowed for the item being enclosed therein.

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3.3.3 Contamination barrier application. All critical surfaces, immediately after cleaning, drying, and the required inspection procedure shall be provided with a contamination barrier as specified herein. Seals applied as contamination barrier shall be tight enough to prevent contamination and shall be protected from puncture. Tape used with sealing procedures shall not contact cleaned surfaces that will come into direct contact with propellant or service fuels and gases. Tape alone shall not be used as a closure. When sealing is accomplished with tape, the barriers shall be lapped not less than two inches. The tape shall be centered over the edge of the outer barrier lap providing a continuous seal for the entire distance of the lap.

3.3.3.1 Large components. Where critical surfaces are interior only, components shall have all openings sealed with blind flanges, metal screw plugs, metal caps, expansion plugs, or polyethylene film conforming to the contamination barrier material requirements of this specification. Polyethylene film shall be secured with vinyl or nylon cord or pressure sensitive tape. Threaded plastic caps or plugs shall not be used to seal openings under any condition. To insure desirable preservation during storage, desiccant shall be applied or components shall be purged with a dry inert gas.

3.3.3.2 Small components. Small components shall be enclosed in a sealed polyethylene bag conforming to the material requirements of this specification. To insure desirable preservation during storage, desiccant shall be applied or components shall be purged with a dry inert gas.

3.3.4 Dissimilar metals. Dissimilar metals as defined in MIL-STD-889 shall not be used in metal-to-metal contact closures.

3.3.5 Padding. Sharp projections, corners and other irregular surfaces of the component shall be cushioned as required to prevent puncture, tear or other damage to the barrier, prior to applying the contamination barrier. Folded pads, thick wraps or twisted lengths of barrier conforming to the material requirement of 3.3.2 shall be used. The cushioning shall be secured in place as necessary with vinyl or nylon cord.

3.4 Packaging and packing. Packaging and packing shall be in accordance with the requirements of Section 5.

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## 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, 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 of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Clean room environment. Components shall not be removed from the controlled clean room environment for performance of tests and inspections specified for determination of cleanliness. Standard functional criteria for design and operation of a clean room environment for ballistic missiles and components is described in FED-STD-209.

4.2 Component inspection procedures.

4.2.1 Inspection No. 1 - particulate inspection. Inspection of cleaned components shall be performed by solvent rinse method where possible. This will generally be accomplished during the final cleaning stages and just prior to the drying operation. The effluent shall be examined for particles by the Millipore method, or equivalent method. For this purpose the final solvent rinse shall be performed with trichlorotrifluoroethane (MIL-C-81302), demineralized water or equivalent, using a measured amount of 200 milliliters of rinse fluid per square foot of component inner (or effective) surface for the rinse. Any component having less than one square foot of internal surface area will be considered as being one square foot. The solvent rinse shall be performed by either sloshing or agitating the fluid around the inside surface of the component to insure dislodgement of particles. Effluents which contain any particles in excess of the criteria mentioned in 3.2.2.1 and 3.2.2.2 shall cause component recleaning and reinspection.

4.2.2 Inspection No. 2 - visual. All equipment, pipes and components shall be examined for evidence of corrosion products, metal chips, scale, weld scale, oil, grease, paints, preservatives, decals or other contamination or foreign matter. The use of special devices to visually examine normally inaccessible areas of

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vessels and pipe is required. Kerosene propellant fuel system equipment, pipes and components may have a light film resulting from a rustproofing treatment which is not a contaminant.

4.2.3 Inspection No. 3 - ultraviolet ("black light"). Visual inspection with the aid of an ultraviolet light source (2500 to 3700 angstrom units) shall be accomplished on all accessible surfaces to determine the presence of petroleum-type hydrocarbons. Remember that all contaminants do not fluoresce under ultraviolet light and this test can be considered only as an aid in detection of contamination. The contractor's personnel shall be qualified in the use of the black light. Any evidence of fluorescence shall be cause for recleaning the item or reverting to Referee Test No. 5 (4.2.5). This inspection requirement is not applicable to the fuel system.

4.2.4 Inspection No. 4 - wipe test. The wipe test shall be made at each end of each clean section of pipe and normally accessible interior surfaces of each component using a new clean filter paper (Whatman No. 42, Schleicher and Scheull No. 602, or equal). This test shall consist of at least two movements of the filter paper across one square foot of surface using due caution to prevent accumulation of static electrical charge on the component. No fluorescence shall be observed when the filter paper wipe sample is subjected to the previously described ultraviolet inspection. The area covered may be reduced as necessary where small lines and parts are involved. A representative sample (a blank) of the filter paper used shall be checked for fluorescence and particle count prior to conducting this test. Any evidence of contamination in excess of the limits described in Section 3 shall require the item to be recleaned and reinspected as outlined above. Wipe samples taken from fuel components are not to be subjected to the fluorescence test. Wipe test samples which include any particles in excess of the criteria mentioned in 3.2 shall cause recleaning and reinspection.

4.2.5 Inspection No. 5 - (referee test): infrared and/or gravimetric quantitative measurement for nonvolatile hydrocarbon in LOX system components (depot support or equivalent test agency). (Note: This test is applicable only to cleaned components and is not to be used to determine system cleanliness.)

The permissible nonvolatile hydrocarbon contamination in any component tested in conformance with this procedure shall be not greater than 2.5 milligrams per square foot of component internal surface area. In case the internal surface cannot be exactly

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computed, the internal surface area shall be estimated. The component shall be prepared for this test, free from all possible sources of hydrocarbon contamination. Everything used in direct contact with the component shall be free from hydrocarbon material, i.e., grease, oil, etc. The fluid or gas entrance and exit ends of the component, upon being removed from the system, shall be wiped with dry, clean cloth or absorbent paper. The inner surface, and any flange surface which contacts the system fluid or gas shall not be wiped. The ends of the component shall be covered with new polyethylene film which shall be taped in place in order to exclude all contamination as above. An appropriate apparatus, such as the one described below, shall be used for rinsing the component.

A large tripod stand shall be covered with aluminum foil and the foil rinsed twice with trichlorotrifluoroethane. A large sheet of aluminum foil shall be placed over the tripod and fashioned into a funnel to allow the trichlorotrifluoroethane to be used for the rinse wash, to run into a beaker placed beneath it. The funnel and the beaker shall be rinsed twice with trichlorotrifluoroethane. The trichlorotrifluoroethane used for rinsing and analysis shall be ACS or spectro grade or better with little or no absorption at 3.45 microns wavelength; the aluminum foil shall be new foil previously checked for hydrocarbon contamination.

Both ends of the component shall be wiped with a clean cloth or absorbent paper moistened with trichlorotrifluoroethane. The component shall be placed upright on the funnel. A trichlorotrifluoroethane-pretreated glass wash bottle employing a glass spout, shall be used to rinse down thoroughly the entire inner surface of the component. Approximately two hundred milliliters (ml) of trichlorotrifluoroethane per square foot of inner surface shall be used. The effluent solvent shall be examined by either of the following, or equivalent, methods:

(1) The collected trichlorotrifluoroethane shall be measured and then analyzed as is, diluted, or concentrated as required by the analytical calibration curve limitations. The absorption at 3.45 microns shall be recorded and the corresponding concentration obtained from the analytical curve. This concentration is then used in calculating the results. Kerosene propellant in accordance with MIL-P-25576 shall be used as a calibration standard. If concentration of the sample is required, a blank of the reagent, trichlorotrifluoroethane, shall be concentrated equivalently and analyzed. Any hydrocarbons found in the blank shall be included in the calculation. Results shall be

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reported as milligrams of kerosene propellant per square foot of the total inner surface of the component.

(2) The collected trichlorotrifluoroethane shall be evaporated to dryness and analyzed by the gravimetric method for nonvolatile residue. A blank sample of trichlorotrifluoroethane of the same volume shall also be run, evaporated, weighed in the same way and subtracted. Results shall be reported as milligrams of kerosene propellant per square foot of the total inner surface of the component.

(3) Calculations - Milligrams (mg) of kerosene propellant per square foot of total inner surface of the component shall be calculated by the following equation:

$$\frac{(\text{mg kerosene propellant per ml}) \times \text{ml of Solution}}{\text{Square Feet of Surface Area Rinsed}} =$$

mg of kerosene propellant per square foot

4.3 Tests and examination for preservation and packaging. Except as otherwise specified herein, sampling, tests, and inspection shall be in accordance with Section 4, MIL-P-116.

4.3.1 First article inspection. Except for determination of cleanliness, packages requiring first article inspection shall be subjected to first article tests and inspection requirements of MIL-P-116 including the rough handling tests.

4.3.2 Acceptance inspection. Except for determination of cleanliness, the selected method of preservation and packaging shall be subjected to the acceptance inspection and test requirements of MIL-P-116. Rough handling tests of MIL-P-116 shall also be applied except that packages previously subject to the first article inspection are exempt from further rough handling tests.

4.3.2.1 Sampling for rough handling tests (Group C of MIL-P-116). Sampling shall be in accordance with table III.

4.3.3 Cyclic Exposure Test. A cyclic exposure test is required only where specified by the contract or order (see 6.2). When required, this test shall be in accordance with MIL-P-116. Sampling shall be as specified in table III.

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TABLE III. Sampling for rough handling tests and cyclic exposure tests.

Lot Size	Sample Size
2 - 13	All
14 - 150	13
151 - 280	20
281 - 500	29
501 - 1200	34
1201 - 3200	42
3201 - 10,000	50
10,001 - 35,000	60
35,001 - 150,000	74
150,001 - 500,000	90
500,001 and over	102

NOTE: The acceptance number in all cases is ZERO.  
The rejection number in all cases is ONE.

4.4 Inspection of packaging. Except when commercial packaging is specified, the sampling and inspection of the preservation and interior package marking shall be in accordance with groups A and B quality conformance inspection requirements of MIL-P-116. The sampling and inspection of the packing for shipment and storage shall be in accordance with the quality assurance provisions of the applicable container specification shown in section 5. The inspection of marking for shipment and storage shall be in accordance with MIL-STD-129. The inspection of commercial packaging shall be as specified in the contract (see 6.2).

## 5. PACKAGING

5.1 General. Except as modified by this specification, components shall be packaged in accordance with MIL-P-116.

5.1.1 Contamination barrier. The contamination barrier shall be considered a critical part of the component being packaged and any damage thereto (puncture, tear, abrasion, separation of seals, etc.) when tested in accordance with 4.3.2.1 shall be cause for rejection.

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5.1.2 Applicable methods of MIL-P-116. Selection of MIL-P-116 packaging methods shall be limited to one of the following:

- Method 1A
  - Submethod 1A-5
  - Submethod 1A-7
  - Submethod 1A-8
  - Submethod 1A-13
  - Submethod 1A-14
  - Submethod 1A-15
  - Submethod 1A-16
- Method 1C
  - Submethod 1C-1
  - Submethod 1C-2
  - Submethod 1C-3
  - Submethod 1C-4
  - Submethod 1C-5
- Method II
  - Submethod IIa
  - Submethod IIb
  - Submethod IIc
  - Submethod IID
  - Submethod IIe
  - Submethod IIf
- Method III

When the method to be used is not stipulated in the contract or order (see 6.2) the supplier shall determine the method based on the criteria established in MIL-P-116 and this document. Contact preservatives shall not be used on surfaces within the contamination barrier.

5.1.3 Supplemental physical protection. Supplemental protection in the form of cushioning, cartons, boxes, or other suitable containers shall be provided for each unit package as required to protect exterior barrier and bags.

5.2 Packing. Packing shall be in accordance with the weight requirements and testing requirements of MIL-STD-2073-1.

5.2.1 Levels of packing. The levels of packing shall be as specified in the contract or purchase order (see 6.2).

5.2.1.1 Level A. The packaged components shall be packed in export-type exterior containers conforming to PPP-B-576, PPP-B-591, PPP-B-601, PPP-B-621, PPP-B-636 or PPP-B-640 as applicable.

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Closure and strapping shall be in accordance with the applicable container specification or appendix thereto. When the container or packaging material immediately within the exterior container is not waterproof, a caseliner shall be provided. Caseliners shall conform to MIL-L-10547 and sealed in accordance with the appendix thereto. Caseliners are not required for fiberboard boxes when the manufacturer's joints, seams, and closures are waterproofed in accordance with the applicable specification or appendix thereto.

5.2.1.2 Level B. The packaged components shall be packed in domestic-type exterior containers conforming to PPP-B-576, PPP-B-591, PPP-B-601, PPP-B-621, PPP-B-636, PPP-B-640 or MIL-C-104 as applicable. Closures and strapping shall be in accordance with the applicable container specification or appendix thereto.

5.2.1.3 Level C. Requirements for Level C packaging shall be in accordance with MIL-STD-1190.

### 5.3 Marking.

5.3.1 Special marking. Each unit container shall be marked, labeled or tagged with the information shown in the example below. The lettering shall be of a size as large as space permits. The labels, tags and markings on all unit packages, levels A, B, and C, shall be waterproofed in accordance with the requirements of MIL-STD-129, level A.

"DO NOT OPEN UNTIL READY FOR USE OR REINSPECTION  
Cleaned for Oxygen/Nitrogen service in accordance  
with MIL-M-9950 (MI).  
If contamination barrier is broken, reprocess  
in accordance with MIL-M-9950.  
Date Packaged: \_\_\_\_\_"

The markings, labels, or tags shall be color coded in the following manner. The lettering shall be black in color on a background of yellow, green, or red as prescribed below:

- a. Components cleaned for hydraulic service shall have a yellow background
- b. Components cleaned for liquid oxygen service shall have a green background
- c. Components special-cleaned shall have a red background (see 6.3.9).

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5.3.2 For shipment. In addition to any special marking required by the contract or order, interior containers and exterior containers shall be marked in accordance with MIL-STD-129.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This specification may be used as a guide for the procedures to be followed during cleaning and packaging of ballistic missiles and components, with particular regard for cleaning of LOX, GN<sub>2</sub> and service gas (helium, etc.) handling systems. The specification should not be used with regard to upstream support equipment such as transporters or gas generators.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of the specification
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1)
- c. Whether cyclic exposure test is required (see 4.3.3)
- d. When a specific packaging method of those authorized in this specification is desired (see 5.1.2)
- e. Level of packing required (see 5.2.1)
- f. Marking requirements in addition to those specified in this specification (see 5.3).

6.3 Definitions.

6.3.1 Filter rating. Absolute rating specifies removal of all particles and fibers whose smallest diameter is larger than the specified pore size for the filter.

6.3.2 Demineralized water. Demineralized water is defined as water having a total maximum of 20 ppm by weight suspended and dissolved solids, pH of 5.5 to 9.0. The water shall be filtered through a filter with an absolute rating of 40 microns.

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6.3.3 System. A collection of components assembled in such a manner as to allow them to interact with each other to perform some specified function.

6.3.4 Components. A component is an integral unit portion of an assembly or system. Examples are tubes, ducts, tanks, valves, actuators, reservoirs, accumulators, etc.

6.3.5 Fiber. A fiber is defined as any material having a diameter of 40 microns or less and a length to diameter ratio of approximately 10:1.

6.3.6 Solid particle. A solid particle is defined as any solid material which cannot be classified as a fiber. The size of a solid particle shall be determined by its largest dimension.

6.3.7 Test fluids. When oxygen, nitrogen, helium, kerosene propellant or other fluids are used as test fluids, they shall comply with the latest issue of the applicable specification listed in 2.1.1. Fluids should be filtered through a 40 micron absolute rated filter, or smaller, before being introduced into components or systems being treated.

6.3.8 LOX compatible clean. Those items that have been cleaned, tested, inspected, identified, and packaged so that they are suitable for installation into gaseous and liquid systems that come into contact with LOX.

6.3.9 Special clean. Those items that have been cleaned, tested, inspected, identified and packaged so that they are suitable for installation into gaseous or liquid systems that do not come into contact with LOX, either directly or indirectly. No test is required for hydrocarbon. This applies to kerosene propellant fuel and hydraulic components.

6.3.10 Hydraulic clean. Those items which are not functional can be identified as either special clean or hydraulic clean.

6.3.11 Normal clean. Those items which are not identified in 6.3.8 through 6.3.10.

6.4 Metrication. Metric equivalents in accordance with FED-STD-376 are acceptable for use in this specification.

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6.5 Subject term (keyword) listing.

Ballistic missiles  
Clean rooms  
Cleanliness requirements  
Gas generators  
Kerosene propellant  
LOX  
RP-1  
Trichlorotrifluoroethane

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:  
Army - MI

Preparing activity:  
Army - MI

(Project 14GP - A122)

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of 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.

<b>I RECOMMEND A CHANGE:</b>		1. DOCUMENT NUMBER MIL-M-9950A (MI)	2. DOCUMENT DATE (YYMMDD) 920320
3. DOCUMENT TITLE SEE BELOW			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)  MISSILE COMPONENTS; LIQUID OXYGEN, LIQUID NITROGEN, GASEOUS OXYGEN, GASEOUS NITROGEN, INSTRUMENT AIR, HELIUM AND FUEL HANDLING SYSTEMS; CLEANING AND PACKAGING FOR DELIVERY			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		6. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME COMMANDER U.S. ARMY MISSILE COMMAND		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (205) 876-6980 746-6980	
c. ADDRESS (Include Zip Code) ATTN: AMSMI-RD-SE-TD-ST REDSTONE ARSENAL, AL 35898-5270		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	