

MIL-I-60326 (RU)  
19 February 1965

## MILITARY SPECIFICATION

### LUBRICANT, FLUOROCARBON TILCHER DISPERSION (FOR USE WITH AMMUNITION)

#### 1. SCOPE

1.1 This specification covers one type of lubricant for use with ammunition.

#### 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 this specification to the extent specified herein.

#### STANDARDS

##### MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes (ABC-STD-105)
- MIL-STD-109 - Quality Assurance Terms and Definitions
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-1233 - Procedures for Determining Particle Size, Particle Size Distribution, and Packed Density of Powdered Materials
- MIL-STD-1235 - Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes

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

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2.2 Other publications.-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 Materials

- ASTM-D-792-60T - Test for Specific Gravity and Density of Plastics
- ASTM-D-1078-63 - Test for Distillation Range of Volatile Organic Liquids
- ASTM-D-1217-54 - Test for Density and Specific Gravity of Liquid by Bingham Pyenometer
- ASTM-E-26-58T - Test for Softing Point by Ring and Ball Apparatus (Tentative)

(Copies may be purchased directly from the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa.)

3. REQUIREMENTS

3.1 Material.-The lubricant shall consist of 20 percent fluorocarbon telomer dispersed in 1,1,2 trichloro - 1,2,2 trifluoroethane.

3.1.1 Fluorocarbon telomer

3.1.1.1 Density.-The density shall be 2.16 grams per milliliter plus or minus 0.10, when tested as specified in 4.3.2.1.

3.1.1.2 Softening point.-The softening point shall be 265 degrees centigrade plus or minus 10, when tested as specified in 4.3.2.1.

3.1.1.3 Particle size.-The average particle size shall be 5 microns plus or minus 2, when tested as specified in 4.3.2.3.

3.1.2 Trichlorotrifluoroethane

3.1.2.1 Density.-The density shall be 1.56 grams per milliliter plus or minus .07, when tested as specified in 4.3.3.1.

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3.1.2.2 Boiling point.-The boiling point shall be 48 degrees Centigrade plus or minus 2, when tested as specified in 4.3.3.2.

3.2 Density.-The density of lubricant shall be 1.65 gram per milliliter plus or minus .08, when tested as specified in 4.3.1.

3.3 Viscosity.-The viscosity shall be 1,600 centipoises plus or minus 100, when tested as specified in 4.3.5.

3.4 Appearance.-The lubricant shall be white translucent fluid.

4. QUALITY ASSURANCE PROVISIONS

4.1 General quality assurance provisions.-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, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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. Reference shall be made to Standard MIL-STD-109 in order to define terms used herein. The provisions of Specification MIL-A-2550 shall apply.

4.1.1 Submission of product.-At the time the completed lot of product is submitted to the Government for acceptance the contractor shall supply the following information accompanied by a certificate which attests that the information provided is correct and applicable to the product being submitted:

a. A statement that the lot complies with all of the quality assurance provisions specified within this specification.  
b. Number of units of product inspected.  
c. Results obtained, by defect code, for all inspection performed.

d. Drawing, specification number and date, together with an identification and date of changes.

e. Certificates of compliance on all material purchased by the contractor when such material is controlled by Government specifications referenced in any of the contractual documents.

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f. Number of items in the lot.

g. Date submitted.

The certificate shall be signed by a responsible agent of the certifying organization. The initial certificate submitted shall be substantiated by evidence of the agent's authority to bind his principal. Substantiation of the agent's authority will not be required with subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization.

4.1.2 Government verification.-Using the contractor's written quality assurance procedure, this detail specification, the applicable drawings and other contractual documents as a guide, the Government inspector shall verify at unscheduled intervals all quality assurance operations performed by the contractor. Verification will be performed to the extent necessary to assure compliance with the contractual requirements. Severity of Government inspection of individual characteristics will be directly related to the seriousness of the classification assigned. In no instance will a characteristic classified "critical" be accepted solely on the basis of the contractor's records.

#### 4.2 Inspection provisions

4.2.1 Lot formation.-A lot shall consist of lubricant produced by one manufacturer in one unchanged process, in accordance with the same specification, and same specification revision. Specification and process changes not affecting safety, performance or fit, as determined by the Government, shall not necessitate changing the lot number.

4.2.2 Examination.-Inspection for Critical defects shall be 100 percent. Sampling plans and procedures for Major and Minor defects shall be in accordance with MIL-STD-105 except that continuous sampling plans in accordance with Standard MIL-STD-1235 may be used if approved by the procuring activity. Also, at the option of the procuring activity, AQL's and sampling plans may be applied to individual characteristics listed using an AQL of 0.65 percent for each Minor defect and an AQL of 0.40 percent for each Major defect.

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## 4.2.2.1 Container sealed

Categories	Defects	Method of Inspection	Code No. (see 6.2)
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Critical: None defined.

Major: None defined.

Minor: AQL 1.00 percent

201.	Container damaged so that contents are exposed or liable to become exposed .....	Visual	01001
202.	Marking misleading or unidentifiable .....	Visual	01002

## 4.2.3 Testing

4.2.3.1 Sampling.-A 20 g. sample shall be selected from each lot of lubricant in such number and amount as to insure that the sample shall be representative of the lot. If the sample fails to comply with any of the requirements specified herein, the lot shall be rejected.

## 4.3 Test methods and procedures

4.3.1 Percent solid.-An accurately weighed specimen of approximately 10 grams shall be transferred to a tared filtering crucible. The residual shall be washed with acetone. The crucible and content shall be air dried until the odor of acetone can no longer be detected then dried in an oven and cooled in a desiccator then weighed. The gain in weight of the tared crucible shall be calculated to percent solids. Code No. 02001.

## 4.3.2 Fluorocarbon telomer

4.3.2.1 Density.-The density shall be determined in accordance with ASTM-D-792-60T except the temperature shall be 25 degrees Centigrade. Code No. 03001.

4.3.2.2 Softening point.-The softening point shall be determined in accordance with ASTM-E-28-58T. Code No. 04001.

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4.3.2.3 Particle size.-The particle size shall be determined in accordance with Standard MIL-STD-1233, Method 100. Code No. 05001.

4.3.3 Trichlorotrifluoroethane

4.3.3.1 Density.-The density shall be determined in accordance with ASTM-D-1217-54 at 25 degrees Centigrade.

4.3.3.2 Boiling point.-The boiling point shall be determined in accordance with ASTM-D-1078-63 using the initial boiling point. Code No. 06001.

4.3.4 Density of lubricant.-The density of the lubricant shall be determined in accordance with ASTM-D-1217-54 at 25 degrees Centigrade. Code No. 07001.

4.3.5 Viscosity.-The viscosity shall be determined with a Brookfield viscometer at 25 degrees Centigrade using a Number 3 spindle at 20 revolutions per minute. Code No. 08001.

4.3.6 Appearance.-The lubricant shall be examined visually for appearance. Code No. 09001.

5. PREPARATION FOR DELIVERY

5.1 Packing Level C.-The lubricant shall be packed to afford adequate protection from damage during shipment from source of supply to the first receiving activity. The shipping containers shall comply with common carrier rules and regulations applicable to the mode of transportation.

5.2 Marking.-Marking shall be in accordance with Standard MIL-STD-129.

6. NOTES

6.1 Ordering data.-Procurement documents should specify the title, number and date of this specification.

6.2 Inspection code numbers.-The five digit code numbers assigned to the inspection herein are to facilitate future data collection and analysis by the Government.

Custodian:  
Army-MU

Preparing activity:  
Army-MU

Project No. 1390-A471

**INSTRUCTIONS** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**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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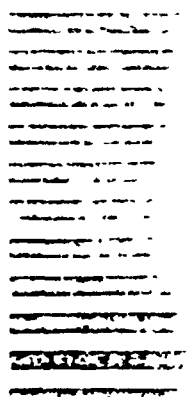
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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1 DOCUMENT NUMBER		2 DOCUMENT TITLE	
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 AREAS			
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 (Inclu Code) - Optional	
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