

INCH-POUND

TT-E-781D

December 3, 1992

SUPERSEDING

TT-E-781C

August 5, 1985

FEDERAL SPECIFICATION

ETHYLENE GLYCOL MONOETHYL ETHER, TECHNICAL

This specification is approved by the Commissioner of Federal Supply Service, General Services Administration, for use by all Federal agencies.

1. SCOPE

1.1 **Scope.** This specification covers technical grade ethylene glycol monoethyl ether, also known as 2-ethoxyethanol, hereinafter referred to as EGMEE.

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:

Federal Specifications:

- PPP-B-585 - Boxes, Wood, Wirebound
- PPP-B-636 - Boxes, Shipping, Fiberboard
- PPP-C-96 - Cans, Metal, 28 Gauge and Lighter
- PPP-D-729 - Drums, Shipping and Storage, Steel, 55-Gallon (208 Liters)
- PPP-F-320 - Fiberboard: Corrugated and Solid, Sheet Stock (Container Grade) and Cut Shapes
- PPP-P-704 - Pails, Metal: (Shipping, Steel, 1 Through 12 Gallons)

Comments or suggestions pertaining to this specification should be addressed to: Commander, U.S. Army Chemical Research, Development and Engineering Center, ATTN: SMCCR-PET-S, Aberdeen Proving Ground, MD 21010-5423.

AMSC N/A

FSC 6810

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TT-E-781D

Federal Standards:

- Fed. Std. No. 123 - Marking for Shipment (Civil Agencies)
- FED-STD-313 - Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification, other Federal specifications, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Washington, DC; Philadelphia, PA, Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Auburn, WA.

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specifications:

- MIL-P-15011 - Pallets, Material Handling, Wood Post Construction, 4-Way Entry

Military Standards:

- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads

(Copies of military specifications and standards required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

Code of Federal Regulations (CFR):

- 29 CFR 1900.1200 - Hazard Communication
- 49 CFR 171 to 199 - Hazardous Materials Regulations

(The Code of Federal Regulations and Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office,

Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

ASTM Standards:

- D 56 – Flash Point by Tag Closed Tester
- D 853 – Hydrogen Sulfide and Sulfur Dioxide Content (Qualitative) of Industrial Aromatic Hydrocarbons
- D 891 – Specific Gravity, Apparent, of Liquid Industrial Chemicals
- D 1078 – Distillation Range of Volatile Organic Liquids
- D 1209 – Color of Clear Liquids (Platinum–Cobalt Scale)
- D 1296 – Odor of Volatile Solvents and Diluents
- D 1353 – Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products
- D 1364 – Water in Volatile Solvents (Fischer Reagent Titration Method)
- D 1613 – Acidity in Volatile Solvents and Chemicals Intermediates Used in Paint, Varnish, Lacquer, and Related Products
- D 3539 – Evaporation Rates of Volatile Liquids by Shell Thin-Film Evaporometer
- E 29 – Using Significant Digits in Test Data to Determine Conformance with Specifications

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia, PA 19103.)

International Civil Aviation Organization

“Technical Instructions for the Safe Transport of Dangerous Goods by Air”

(Application for copies should be addressed to the International Civil Aviation Organization, 1000 Sherbrooke Street West, Suite 400, Montreal, Quebec, Canada H3A 2R2.)

International Maritime Organization

“International Maritime Dangerous Goods Code”

(Application for copies should be addressed to the International Maritime Organization, 101-104 Piccadilly, London, W1V 0AE, England.)

TT-E-781D

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

3. REQUIREMENTS

3.1 Appearance. EGMEE shall be clear, uniform, and free from foreign matter when tested as specified in 4.2.4.1.

3.2 Chemical and physical characteristics. EGMEE shall conform to the chemical and physical characteristics of table I when tested as specified therein.

TABLE I. Chemical and physical characteristics

Characteristic	Requirements		Test paragraph
	Minimum	Maximum	
Color, Pt-Co scale	----	Number 15	4.2.4.2
Odor	----	Mild, non-residual	4.2.4.3
Water content, percent by weight	----	0.1	4.2.4.4
Specific gravity at 20 ° /20 ° C	0.929	0.932	4.2.4.5
Nonvolatile matter (g/100 mL sample)	----	0.005	4.2.4.6
Acidity (free acid as acetic acid), percent by weight	----	0.01	4.2.4.7
Distillation range:			4.2.4.8
Below 134.0 ° C	----	----	
Above 136.0 ° C	----	----	
Flash point, ° C	38	----	4.2.4.9
Evaporation rate (n-butyl acetate = 1.0)	----	0.34	4.2.4.10

3.3 Spot test. EGMEE shall leave no stain or oily spots when tested as specified in 4.2.4.11.

3.4 Sulfur. EGMEE shall be free from sulfur in any form when tested as specified in 4.2.4.12.

3.5 Material Safety Data Sheets. Material Safety Data Sheets for EGMEE shall be prepared and submitted by the contractor in accordance with FED-STD-313 (see 6.3).

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 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Contractor assurance of compliance. The contractor's quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the applicable specification requirements using, as a minimum, the conformance criteria specified herein.

4.1.3 Alternative inspection provisions. Alternative inspection procedures, methods, or equipment, such as statistical process control, tool control, and other types of sampling procedures may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the inspection provisions specified herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation and approval. (See 6.4.) When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or better than the quality assurance provisions specified herein. In cases of dispute as to whether the contractor's proposed alternative provides equal quality assurance, the provisions of this specification shall apply. All approved alternative inspection provisions shall be specifically incorporated into the contractor's quality program or detailed inspection system, as applicable.

4.2 Quality conformance inspection.

4.2.1 Lotting. A lot shall consist of the EGMEE produced by one manufacturer, at one plant, from the same materials, and under essentially the same manufacturing conditions

TT-E-781D

provided the operation is continuous. In the event the process is a batch operation, each batch shall constitute a lot (see 6.5).

4.2.2 Sampling.

4.2.2.1 For examination of packaging. Sampling shall be conducted in accordance with table II. The sample unit shall be one filled unit pack or packing container, as applicable, ready for shipment.

TABLE II. Sampling for packaging examination and test

Number of containers in batch or lot	Number of sample containers
1 or 2	all
3 to 25	3
26 to 50	5
51 to 90	6
91 to 150	7
151 to 280	10
281 to 500	11
501 to 1,200	15
1,201 to 3,200	18
3,201 to 10,000	22
over 10,000	29

4.2.2.2 For EGMEE test. See 6.6 for sampling and testing precautions. Sampling shall be conducted in accordance with table III. A representative specimen of 0.9 ± 0.05 liters (L) shall be removed from each sample container and placed in a suitable clean, dry container labeled to identify the lot and container from which it was taken.

TABLE III. Sampling for EGMEE test

Number of containers in batch or lot	Number of sample containers
1 or 2	all
3 to 25	2
26 to 150	3
151 to 1,200	5
1,201 to 7,000	8
7,001 to 20,000	10
Over 20,000	20

4.2.2.3 For container leakage test. Sampling shall be conducted in accordance with table II. The sample unit shall be one container.

4.2.3 Inspection procedure.

4.2.3.1 For examination of packaging. Sample unit packs and packing containers shall be examined for the characteristics listed below. Failure of any sample unit pack or packing container to conform to all characteristics shall be cause for rejection of the lot represented.

- (a) Contents per container
- (b) Container
- (c) Container closure
- (d) Container free of damage and leaks
- (e) Fiberboard pads or partitions evident, correct, and properly placed, or as specified (when required)
- (f) Marking evident, correct, and legible
- (g) Unitization

4.2.3.2 For EGMEE test. See 6.6 for sampling and testing precautions. Each sample specimen taken in 4.2.2.2 shall be tested as specified in 4.2.4. Failure of any test by any specimen shall be cause for rejection of the lot represented.

4.2.3.3 For container leakage test. The sample containers selected in 4.2.2.3 shall be tested as specified in 4.2.5. Failure of any test by any container shall be cause for rejection of the lot represented.

4.2.3.4 Significant places. For the purpose of determining conformance with this specification, and observed or calculated value shall be rounded off "to the nearest unit" in the last right-hand place of figures used in expressing the limiting value, in accordance with ASTM E 29.

TT-E-781D

4.2.4 EGMEE tests. Tests shall be conducted as follows:

4.2.4.1 Appearance. Visually examine the specimen through transmitted light for clarity, uniformity, and foreign matter.

4.2.4.2 Color. Determine the color of the specimen in accordance with ASTM D 1209.

4.2.4.3 Odor. Determine the odor of the specimen in accordance with ASTM D 1296.

4.2.4.4 Water content. Determine the presence of water in the specimen in accordance with ASTM D 1364.

4.2.4.5 Specific gravity. Determine the specific gravity of the specimen in accordance with ASTM D 891.

4.2.4.6 Nonvolatile matter. Determine the nonvolatile matter of the specimen in accordance with ASTM D 1353.

4.2.4.7 Acidity. Determine the acidity of the specimen in accordance with ASTM D 1613.

4.2.4.8 Distillation range. Determine the distillation range of the specimen in accordance with ASTM D 1078 using ASTM Solvents Distillation Thermometer 102C, with range from 123° to 177°C.

4.2.4.9 Flash point. Determine the flash point of the specimen in accordance with ASTM D 56.

4.2.4.10 Evaporation rate. Determine the evaporation rate of the specimen in accordance with ASTM D 3539.

4.2.4.11 Spot test. Support a piece of 125-millimeter (mm) diameter filter paper (Whatman No. 2 or equal) on a crystallizing dish which is 70 mm in diameter. Using a small pipet or buret, place five drops of the specimen in the center of the paper. Allow the liquid to evaporate at 21° to 32°C, away from both sunlight and strong drafts. After 30 minutes examine the filter paper for the presence of any stains or residual oiliness.

4.2.4.12 Sulfur. Determine the sulfur in the specimen in accordance with ASTM D 853.

4.2.5 Container leakage test. Place the container in each of the following positions, and leave it in each for a period of 15 minutes.

- (a) Upright
- (b) Upside down
- (c) On one side (or one quadrant)
- (d) On one end (or second quadrant)
- (e) On other side (or fourth quadrant)

Examine the container after each period for any evidence of leakage.

5. PACKAGING

Note: The metric equivalents given for inch-pound quantities are nominal values provided for informational purposes and should not be considered as quantity requirements.

5.1 Packaging. Packaging shall be in accordance with the applicable requirements of 49 CFR 171 to 199 and the International Civil Aviation Organization – Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO–TDGA) or the International Maritime Organization – International Maritime Dangerous Goods Code (IMO–IMDGC), as applicable to the mode of transportation. The packaging shall meet the applicable packaging performance tests specified in ICAO–TDGA or IMO–IMDGC, as applicable.

5.2 Unit packing.

5.2.1 One-quart (1.0-liter) quantity. A quantity of 1 quart (+1/4 or –0 fluid ounces) (1.0 liter) of EGMEE shall be unit packed in a nominal 1-quart (1.0-liter) oblong tin-plate metal can conforming to an IP.3 container of ICAO–TDGA or IMO–IMDGC, as applicable. The IP.3 container shall conform to type V, class 4, with the screw-cap closure and inner seal of PPP–C–96. The can and screw-cap shall be formed from commercial designation electrolytic tin-plate number 100. The liner of the screw-cap and its facing shall be highly resistant and nonpermeable to EGMEE. The can shall be coated plan B with side seam striped. The screw-cap shall be prevented from loosening by use of a secondary closure.

5.2.2 One-gallon (4.0-liter) quantity. A quantity of 1 gallon (+1 or –0 fluid ounces) (4.0 liters) of EGMEE shall be unit packed in a nominal 1-gallon (4.0-liter) oblong tin-plate metal can in the same manner as specified in 5.2.1.

5.3 Packing. Packing shall be level A or B as specified (see 6.2).

5.3.1 Level A.

5.3.1.1 One-quart (1.0-liter) quantity. Twelve 1-quart (1.0-liter) cans, unit packed as specified in 5.2.1, shall be packed in three rows of four, with closure ends uppermost in a

TT-E-781D

close-fitting wirebound wood box. The wood box shall conform to the requirements of a 4C1 container of ICAO-TDGA or IMO-IMDGC, as applicable. The 4C1 container shall conform to class 3, style optional of PPP-B-585 for load type II. Each can shall be placed in close-fitting, full-can-height cell formed from half-slotted fiberboard partitions. The fiberboard pads shall be used to line all inside faces of the box and additional pads shall be inserted as needed to prevent motion of the contents. Fiberboard partitions and pads shall conform to class weather-resistant, grade V3c of PPP-F-320. Each box shall be closed and reinforced as specified in accordance with the general packing requirements of ICAO-TDGA or IMO-IMDGC, as applicable.

5.3.1.2 One-gallon (4.0-liter) quantity. Four 1-gallon (4.0-liter) cans, unit packed as specified in 5.2.2, shall be packed in a close-fitting wirebound wood box. The wood box shall conform to the requirements of a 4C1 container of ICAO-TDGA or IMO-IMDGC, as applicable. The 4C1 container shall conform to class 3, style optional of PPP-B-585. Each can shall be placed in close-fitting, full-can-height cell formed from half-slotted fiberboard partitions. The fiberboard pads shall be used to completely line all inside faces of the box and additional pads shall be inserted as needed to prevent motion of the contents. Fiberboard partitions and pads shall conform to class weather-resistant, grade V3c of PPP-F-320. Each box shall be closed and reinforced as specified in accordance with the general packing requirements of ICAO-TDGA or IMO-IMDGC, as applicable.

5.3.1.2 Five-gallon (20.0-liter) quantity. A quantity of 5 gallons (+5 or -0 fluid ounces) (20.0 liters) of EGMEE be packed in a nominal 5-gallon (20.0-liter) steel pail conforming to the requirements of a 1A1 container of ICAO-TDGA or IMO-IMDGC, as applicable. The 1A1 container shall conform to type I, class 4 of PPP-P-704, furnished with a metal screw-cap. The pail closure shall be tightened to a torque within the range specified by the pail manufacturer. The screw-cap shall be prevented from loosening by use of a secondary closure.

5.3.1.3 Fifty-five-gallon (210.0-liter) quantity. A quantity of 55 gallons (+1/2 or -0 gallons) (210.0 liters) of EGMEE shall be packed in a nominal 55-gallon (210.0-liter) steel drum conforming to the requirements of a 1A1 container of ICAO-TDGA or IMO-IMDGC, as applicable. The 1A1 container shall conform to type I, class A of PPP-D-729 and shall be furnished with a 3/4-inch and 2-inch diameter threaded gaskets flange-plug closure with dust caps. The drum closure shall be tightened to a torque within the range specified by the drum manufacturer.

5.3.2 Level B.

5.3.2.1 One-quart (1.0-liter) quantity. Twelve 1-quart (1.0-liter) cans, unit packed as specified in 5.2.1, shall be packed in three rows of four cans in a close-fitting, weather-resistant fiberboard box conforming to the requirements of a 4G container of ICAO-TDGA or IMO-IMDGC, as applicable. Each can shall be placed in a close-fitting, full-can-height cell formed from half-slotted fiberboard partitions. Fiberboard pads shall be placed on top of and

beneath the cans. Partitions and pads shall be formed from fiberboard conforming to class weather-resistant, grade V3c of PPP-F-320. Each box shall be closed and reinforced as specified in accordance with the general packing requirements of ICAO-TDGA or IMO-IMDGC, as applicable.

5.4 Overpacking. Overpacking shall be level A or B as specified (see 6.2).

5.4.1 Level A.

5.4.1.1 One-quart (1.0-liter) quantity. Two packs of 1-quart (1.0-liter) cans shall be overpacked one on top of the other, with closure ends uppermost in a close-fitting wirebound wood box. The wood box shall conform to class 3, style optional of PPP-B-585. All inside faces of the box shall be lined with fiberboard pads and additional pads shall be inserted where needed to prevent motion of the contents. The pads shall be formed from fiberboard conforming to class weather-resistant, grade V3c of PPP-F-320. The box shall be closed and reinforced as specified in the appendix to PPP-B-585.

5.4.2 Level B.

5.4.2.1 One-quart (1.0-liter) quantity. Two packs of 1-quart (1.0-liter) cans shall be overpacked in a close-fitting, weather-resistant fiberboard box conforming to grade V3c of PPP-B-636. The fiberboard box shall be closed as specified in the appendix to PPP-B-636.

5.5 Marking. Shipments for civil agencies shall be marked in accordance with Fed. Std. No. 123. Shipments for military activities shall be marked in accordance with MIL-STD-129.

5.5.1 Container compliance markings. Each shipping container shall be marked in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.5.2 Hazard class label. Each shipping container and pallet load shall be labeled in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.5.3 Proper shipping name. Each shipping container and pallet load shall be marked with the proper shipping name in accordance with 49 CFR 171 to 179 and either ICAO-TDGA or IMO-IMDGC, as applicable.

5.5.4 Precautionary markings. Each unit pack, pack, and shipping container shall be marked or labeled, as applicable, in accordance with 29 CFR, Hazards Communication, 1900.1200(f) to show the required precautionary information. Each outer container shall be marked to show the top of the container by use of an arrow and the word "UP".

5.5.5 Overpack markings. Each overpack shall be marked "Inner packages comply with prescribed specification 4G."

TT-E-781D

5.6 Palletization.

5.6.1 One-quart (1.0-liter) and one-gallon (4.0-liter) quantities. The 1-quart (1.0-liter) and 1-gallon (4.0-liter) quantities of EGMEE shall be palletized in accordance with the requirements for load type I of MIL-STD-147. The pallet shall be fabricated from group 1 or 2, using style 1, type I, class 1 of MIL-P-15011. The pallet shall be preserved for level A shipments.

5.6.2 Five-gallon (20.0-liter) quantity. The 5-gallon (20.0-liter) quantity packs of EGMEE shall be palletized in accordance with the requirements for load type III of MIL-STD-147. The pallet shall be fabricated from group 1 or 2, using style 1, type I, class 1 of MIL-P-15011. The pallet shall be preserved for level A shipments.

6. NOTES

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

6.1 Intended use. EGMEE is intended for use in the manufacture of organic protective coatings.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification
- (b) Level of unit packing and packing required (see 5.2 and 5.3)
- (c) Level of overpacking required (see 5.4)
- (d) If palletization is required for shipment (see 5.6).

6.3 Material Safety Data Sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets prepared in accordance with FED-STD-313. The pertinent mailing addresses for submissions of data are listed in FED-STD-313.

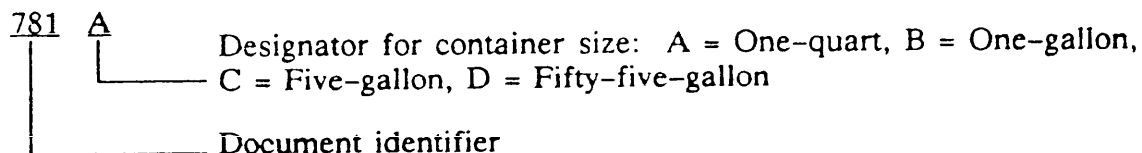
6.4 Submission of alternative inspection provisions. Proposed alternative inspection provisions should be submitted by the contractor to the procuring contracting officer for evaluation and approval by the technical activity responsible for preparation of this specification.

6.5 Batch. A batch is defined as that quantity of material which has been manufactured by some unit chemical process or subjected to some physical mixing operation intended to make the final product substantially uniform.

6.6 Sampling and testing precautions. This specification requires inspection of chemical material which is potentially hazardous to personnel. This specification does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of

this specification to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

6.7 Part identification numbering system. A recommended system is as follows:



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

6.9 Subject term (key word) listing.

ethylene glycol monoethyl ether
organic
protective coatings

MILITARY INTERESTS:

Custodians:

Army - EA
Air Force - 68

Review activities:

Army - MD
DLA - GS

User activities:

Navy - SA

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA-FSS (9FTE-10)

Preparing activity:

Army - EA

Project No. 6810-1275

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.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER TT-E-781D	2. DOCUMENT DATE (YYMMDD) 921203
3. DOCUMENT TITLE ETHYLENE GLYCOL MONOETHYL ETHER, TECHNICAL		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. 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 Army Edgewood Research, Development and Engineering Center	b. TELEPHONE (Include Area Code) (1) Commercial (410) 671-3259	(2) AUTOVON DSN 584-3259
c. ADDRESS (Include Zip Code) Tech Dir, U.S. Army ERDEC ATTN: SCBRD-ENE (Std/Specs/Pkg) Aberdeen Proving Ground, MD 21010-5423	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	