MIL-S-271B
25 MAY 1962
SUPERSEDING
MIL-A-271A
21 AUGUST 1951

MILITARY SPECIFICATION

STEARIC ACID, TECHNICAL

This specification has been approved by the Department of Defense and is mandatory for use by the Departments of the Army, the Navy, and the Air Force.

1. SCOPE

1.1 This specification covers Stearic Acid for use in loading ammunition and as a lubricant in the pelleting of explosives.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

PPP-D-723 — Drums, Fiber.

PPP-D-729 — Drums, Metal, 55-Gallon (For Shipment of Non-corrosive Material).

PPP-P-704 — Pails, Shipping, Steel 1-through 12-gallon.

RR-S-366 — Sieves, Standard Testing.

UU-S-48 — Sacks, Paper, Shipping.

STANDARDS

FEDERAL

Fed. Test STD No. 536 — Soap and Soap Products (Including Synthetic Detergents).
Methods of Sampling and Testing.

STANDARDS

MILITARY

MIL-STD-105 — Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-109 — Inspection Terms and Definitions.

MIL-STD-129 — Marking for Shipment and Storage.

PUBLICATIONS

ORDNANCE CORPS

ORD-M608-11 — Procedures and Tables for Continuous Sampling by Attributes.

FSC 6810

(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.)

3. REQUIREMENTS

3.1 The stearic acid shall meet the requirements specified in table I.

TABLE I. *Physical and Chemical Requirements*

Tests	
Grit	None
Titer (solidification point), degrees Centigrade (°C.), minimum (min.).	66
Acidity, maximum (max.)	Trace
Moisture, percent, max.	0.10
Iodine number (No.), max.	1.0
Granulation passing through No. 50 sieve, percent, min.	95
Passing through No. 100 sieve, percent, min.	85

4. QUALITY ASSURANCE PROVISIONS

4.1 General quality assurance provisions. The supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examinations and tests shall be kept complete and available to the Government as specified in the contract or order. 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 the terms used herein. Inspection shall be performed in accordance with this specification and other specifications referenced in any of the contractual documents.

4.1.1 *Contractor quality assurance system.* If the contractor desires to utilize a quality assurance system, which is at variance with the quality assurance provisions of 4.2.2 and 4.2.3 and other documents referenced herein, he shall submit a written description of the system to the contracting officer for approval prior to initiation of production. It shall include a description covering controls for lot formation and identification, inspections to be performed, inspection stations, sampling procedures, methods of inspection, (measuring and testing equipment), and provisions for control and disposition of non-conforming material. The written description will be considered acceptable when, as a minimum, it provides the quality assurance provisions required by the provisions of 4.2 and 4.3 and the other documents referenced herein. The contractor shall not be restricted to the inspection station or the method of inspection listed in this specification provided that an equivalent control is included in the approved quality assurance procedure. In cases of dispute as to whether certain procedures of the contractor's system provide equal assurance, the comparable procedure of this specification shall apply. The contractor shall notify the Government of, and obtain approval for, any changes to the written procedure that effects the degree of assurance required by this specification or other documents referenced herein.

4.1.2 *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 submitted.

(a) A stateent that the lot complies with all quality assurance provisions of the approved current written description of the system.

(b) Quantity of product inspected.

(c) Results obtained for all inspection performed.

(d) Specification number and date, together with an identification and date of changes, when such material is covered by referenced Government specifications.

have available and utilize correctly this equipment and is

(e) Certificates of analysis on all material produced directly by the contractor.

(f) Quantity of production in the lot.

(g) Date of 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.

4.1.3 *Government verification.* Using the contractor's written quality assurance procedure (see 4.1.1), this detail specification, and other contractual documents as a guide, the Government inspector shall verify all quality assurance operations performed by the contractor. Verification shall be in accordance with a or b as applicable, the decision being the responsibility of the procuring activity. In either case, the inspector shall also ascertain, prior to acceptance, that all quality assurance provisions of other specifications referenced in any of the contractual documents have been complied with. Deviations from prescribed or agreed upon procedures discovered by the Government inspector shall be brought to the attention of the supplier. Disposition of the product and remedial action shall be as directed by the Government inspector and, depending on the nature of the deviation, may consist of lot rejection, screening, resampling, reinstruction of the supplier's employees, or other appropriate action:

(a) Verification at the point of manufacture shall be accomplished at unscheduled intervals in accordance with 4.1.3.1 and 4.1.3.2.

(b) Verification at the point of delivery shall be in accordance with 4.1.3.2.

4.1.3.1 *Surveillance.* Surveillance shall include, but is not limited to:

(a) Observation of procedures concerning lot formation and identification.

(b) Observation of sampling procedures and application of acceptance criteria.

(c) Determination that all required examinations and tests are performed in accordance with the prescribed procedures of this specification, or approved equivalents thereto.

(d) Review of procedures for control and disposition of non-conforming material.

4.1.3.2 *Product inspection.* Product inspection shall consist of Government inspection of product which has been previously inspected by the contractor and found to meet the quality assurance provisions of this specification. The inspection by the Government shall be performed in order to determine that the product is of the quality required by this specification and that the contractor's records are reliable.

4.2 **Inspection provisions.**

4.2.1 *Lot formation.* A lot shall consist of one or more batches of stearic acid, produced by one manufacturer, in accordance with the same specification, or same specification revision, under one continuous set of operating conditions. Each batch shall consist of that quantity of the stearic acid that has been subjected to the same unit chemical or physical mixing process intended to make the final product homogeneous.

4.2.2 *Examination.* Sampling plans and procedures for the following classification of defects shall be in accordance with Standard MIL-STD-105 except that inspection for critical defects, when listed, shall be 100 percent. Continuous sampling plans, in ac-

cordance with Handbook ORD-M608-11 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 the individual characteristics listed using an AQL of 0.25 percent for each major defect and an AQL of 0.40 percent for each minor defect.

4.2.2.1 *Paper sacks prior to filling.*

Categories	Defects	Method of inspection
Critical:	None defined.	
Major:	*AQL 0.25 percent*	
101.	Improper sack	Visual
Minor:	None defined.	

4.2.2.2 *Paper sacks sealed.*

Categories	Defects	Method of inspection
Critical:	None defined.	
Major:	*AQL 0.25 percent*	
101.	Weight of contents	Scale
102.	Closure incomplete or damged to the exient that contents sift out	Visual
Minor:	*AQL 0.40 percent*	
201.	Marking missing or unidentifiable	Visual

4.2.2.3 *Drums sealed.*

Categories	Defects	Method of inspection
Critical:	None defined.	
Major:	*AQL 0.25 percent*	
101.	Weight of contents	Scale
102.	Closure incomplete or damaged to the extent that contents sift out	Visual
Minor:	*AQL 0.40 percent*	
201.	Markings missing or unidentifiable	Visual

4.2.3 *Testing.*

4.2.3.1 *Sampling by lot.* A random sample of 10 containers shall be selected from each lot. When lots are comprised of 10 containers or less, each container shall be sampled.

4.2.3.2 *Preparation of composite.* A 1.0 ±.2 ounce primary sample of stearic acid shall be removed from each of the 10 containers in order to equal 10 ounces. If there are less than 10 containers, equal primary samples in sufficient quantity to equal 10 ounces shall be removed from each container. The individual primary sample shall then be combined in order to form a homogeneous composite sample of 10 ounces and subjected to the tests specified in 4.3. If the composite sample fails to comply with any of the requirements specified, the lot shall be rejected.

4.3 Test methods and procedures. The following tests shall be performed as specified herein.

4.3.1 *Grit.* Dissolve approximately 50 grams (gm) of the sample in ether. Filter the solution using a Whatman No. 41 or equivalent filter paper and wash any residue with ether until the filtrate shows no evidence of dissolved stearic acid when a portion of it is evaporated to dryness. Transfer the residue to a smooth glass slide. Press and rub the material on the glass with a smooth steel spatula. Grit is present if there is a persistent scratching noise, when the material is pressed and rubbed or when abrasion can be felt through the spatula during that action.

4.3.2 *Titer test.* This test shall be conducted in accordance with method 901 of Federal Test Method Standard No. 536.

4.3.3 *Acidity.* Melt approximately 25 gm of the sample in a test tube and add an equal volume of hot, neutral, distilled water. Shake the mixture thoroughly for 2 minutes. Allow the liquid layer to separate, cool to room temperature, filter using a Whatman No. 41 or equivalent filter paper and titrate the filtrate with approximately 0.01 normal alkali, using methyl orange as the indicator. The sample contains more than a trace of acidity if more than one drop of alkali is needed to change the color of the solution.

4.3.4 *Iodine number.* The iodine number shall be determined in accordance with Method 1101.2 of Federal Test Method Stan-

dard No. 536 except that a 10 gm sample and a 50-milliliter portion of chloroform for dissolving the sample shall be used instead of the respective amounts of the material specified in Federal Test Method Standard No. 536.

4.3.5 *Moisture.* Tranfer approximately 10 gm of the sample to a tared drying dish and weigh the dish and contents. Dry for 4 hours in a vacuum oven at 50° to 55° C. cool in a vacuum desiccator and weigh. Calculate the loss in weight to percent moisture content of the sample.

4.3.6 *Granulation.* Nest the designated sieves (see 3.1), conforming to Specification RR-S-366, above a receiving pan. Place an accurately weighed 10 gm portion of the sample on the top sieve and brush the material gently with a camel hair brush for 5 minutes. Remove the top sieve. Repeat the brushing operation on the second sieve. Weigh the material retained on each sieve and calculate to percent, passing through each of the sieves.

5. PREPARATION FOR DELIVERY

5.1 Packing.

5.1.1 *Level A.* Stearic acid shall be packed in 55-gallon capacity drums conforming to type III or IV of Specification PPP-D-729, or 5-gallon capacity pails conforming to type II, class 3 of Specification PPP-P-704, or in fiber drums conforming to type II or III, grade A of Specification PPP-D-723.

5.1.2 *Level C.* Unless otherwise specified, stearic acid shall be packed in sacks conforming to construction number 10L/W of Specification UU-S-48, or fiber drums conforming to type I, grade A of Specification PPP-D-723.

5.2 Unless otherwise specified in the contract or order, each container shall be plainly marked in accordance with Standard MIL-STD-129.

6. NOTES

6.1 Ordering data. Procurement documents should specify the following: (a) the title number, and date of this specification, (b) level of packing required.

6.2 Intended use. The stearic acid covered by this specification is intended for use as a desensitizer and as a lubricant in the manufacture of ammunition.

Custodians:
Army—Ordnance Corps.
Navy—Bureau of Naval Weapons
Preparing activity:
Army—Ordnance Corps.

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.

(Fold along this line)

(Fold along this line)

DEPARTMENT OF THE ARMY

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO 12062 WASHINGTON D C
POSTAGE WILL BE PAID BY THE DEPARTMENT OF THE ARMY

Commander
US Army Armement Research and Development Command
ATTN: DRDAR-TST-S
Dover, NJ 07801

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)

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)*
	☐ VENDOR
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ 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 *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

DD FORM 1426 PREVIOUS EDITION IS OBSOLETE