

JAN-L-488

14 AUGUST 1947

JOINT ARMY-NAVY SPECIFICATION

**LEAD CHROMATE
(FOR USE IN AMMUNITION)**

This specification was approved by the War Department and the Navy Department for use of procurement services of the Army and the Navy.

A. APPLICABLE SPECIFICATIONS AND OTHER PUBLICATION

A-1. Specifications.—The following specifications, of the issue in effect on date of invitation for bids, form a part of this specification:

U. S. ARMY SPECIFICATIONS

50-0-1—General Specification for Ammunition except Small Arms Ammunition.¹

100-2—Standard Specification for Marking Shipments by Contractors.²

NAVY DEPARTMENT SPECIFICATION

General Specification for Inspection of Material.²

FEDERAL SPECIFICATION

RR-S-366—Sieves; Standard Testing.

A-2. Other publication.—The following publication of the issue in effect on date of invitation for bids, forms a part of this specification:

BUREAU OF SUPPLIES AND ACCOUNTS PUBLICATION

Navy Shipment Marking Handbook.¹

B. GRADE

B-1. This specification covers one grade of lead chromate as hereinafter specified.

C. MATERIAL AND WORKMANSHIP

C-1. See section E.

D. GENERAL REQUIREMENTS

D-1. See section E.

E. DETAIL REQUIREMENTS

E-1. Moisture.—Maximum, 0.2 percent.

E-2. Purity.—Minimum, 99.2 percent.

E-3. Soluble matter.—Maximum, 0.2 percent.

E-4. Grit.—Maximum, 0.002 percent.

E-5. Apparent density.—Minimum, 0.90 gm./ml.

E-6. Granulation.—Through No. 325 U. S. Standard sieve, 100.0 percent minimum. Sieves shall conform to Federal Specification RR-S-366.

¹ Applicable only to Army purchases.

² Applicable only to Navy purchases.

F. METHODS OF SAMPLING, INSPECTION, AND TESTS

F-1. Size of lot.—Maximum 1,000 pounds.

F-2. Sampling.—A minimum of 10 containers in the lot shall be selected in such a manner as to be representative of the lot. When lots comprise less than 10 containers, all containers in the lot shall be selected. From each of these containers, remove enough of the material to form a composite sample of approximately 8 ounces. Mix these portions thoroughly to form a homogeneous composite sample. Place this composite sample in a suitable container, seal and label as to show the name of the material, manufacturer, plant, contract or order number, and number of pounds in the lot. All acceptance tests shall be made on the composite sample representative of the lot.

F-3. Inspection.—

F-3a. Army.—Inspection shall be made in accordance with the requirements of U. S. Army Specification 50-0-1, and shall be at the point of delivery unless otherwise specified in the contract or order.

F-3b. Navy.—Inspection shall be made at the point of delivery unless otherwise specified in the contract or order.

F-4. Tests.—The laboratory tests shall be made in accordance with the following paragraphs. For Navy purchases, the tests shall be made at a Government laboratory unless otherwise specified in the contract or order.

F-4a. Moisture.—Transfer a portion of approximately 5 gm. of the sample to a tared weighing dish and weigh. Heat the dish and contents at 100°C. for 2 hours, cool in a desiccator, and weigh. Calculate any loss in weight as percent moisture.

F-4b. Purity.—Dissolve a weighed portion of approximately 0.5 gm. of the sample by warming with 20 ml. of 20-percent NaOH in a glass stoppered 250-ml. bottle. Add 2 gm. of potassium iodide, and when it is dissolved, dilute with 100 ml. of water and add 15 ml. of concentrated HCl. Allow to stand, protected from light, for 5 minutes. Titrate the liberated iodine with approximately N/10 sodium thiosulfate solution, adding starch solution towards the end. Calculate the percent lead chromate as follows:

$$\text{Percent lead chromate} = \frac{10.77 \text{ VN}}{W}$$

where

V=ml. of thiosulfate solution used

N=normality of thiosulfate solution

W=gm. of sample.

F-4c. Soluble matter.—Transfer an accurately weighed portion of approximately 5 gm. of the sample to a 250 ml. beaker. Add 100 ml. of boiling distilled water, boil the mixture for 5 minutes and cool to room temperature. Filter the mixture through a tared filtering crucible. Wash the retained solid with alcohol and then with ether. Remove most of the mechanically-held ether by air-drying. Heat the crucible and contents at 100°C., for 1 hour, cool in a dessicator, and weigh. Calculate the loss in weight as percent soluble matter.

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F-4d. Grit.—Transfer a 50-gm. portion of the sample to a beaker and add 200 ml. of water. Stir the mixture and pour through a 3-inch No. 170 U. S. Standard sieve, both sides of which have been wetted with alcohol. Transfer any remaining insoluble matter from beaker to sieve and wash the residue on the sieve with a stream of water until the wash water passing through the sieve is clear and free from solid particles. A soft 1-inch camel's-hair brush may be used in this operation. Wash the residue on the sieve with distilled water, rinse with acetone and dry the sieve at 100°C. for 1 hour. Cool and weigh the sieve and residue, calculating the increase in weight as percentage of the sample. Transfer the residue from the sieve to a smooth glass slide and rub the material on the slide with a steel spatula blade. Note if the presence of grit is indicated by the persistence of a scratching sound and the appearance of scratches on the glass slide.

F-4e. Apparent density.—Tare a 100-ml graduate cylinder having graduations extending over approximately 7.5 inches. Place on the cylinder a funnel with a stem approximately 1 inch long which is 0.5 inch in internal diameter. Slowly pour against the inside of the funnel 90 to 95 ml. of the sample from a height of 12 inches from the base of the cylinder. Do not shake or jar the cylinder. Level off the material in the cylinder, note the volume occupied, and weigh the cylinder and contents. Calculate the apparent density by dividing the weight in gm. of the lead chromate by its volume in ml.

F-4f. Granulation.—Superimpose a No. 325 U. S. Standard sieve on a bottom pan and transfer a 50-gm. portion of the sample to the sieve. Moisten the chromate and wash this through the sieve by means of a jet of water, breaking up any lumps by gentle brushing with a camel's hair brush. If any of the chromate remains on the sieve, dry this at 100°C., brush the retained chromate into a tared weighing dish, weigh, and calculate the percentage of the sample which passes through the sieve.

F-5. Resubmission.—If the composite sample representative of the lot fails to pass the inspection tests, the manufacturer shall have the option of having analysis of each primary sample made without expense to the Government. The manufacturer may then remove or replace defective portions of the lot represented by the primary samples which fail to meet the requirements, and submit the lot for acceptance, provided that the markings on the container are such that complete removal or replacement of defective portions of the lot can be made to the satisfaction of the Government inspector.

G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT

G-1. Packing.—Lead chromate shall be packed in commercial containers so constructed as to insure acceptance by common or other carriers for safe transportation, at the lowest rate, to the point of delivery.

G-2. Marking.—In addition to any special marking required by the contract or order, shipments for the Army shall be marked in accordance with the requirements of U. S. Army Specification 100-2; for the Navy, in accordance with the requirements of the Navy Shipment Marking Handbook.

H. NOTES

H-1. Use.—Lead chromate covered by this specification is intended for use in the manufacture of non-gaseous powder.

H-2. Requests, requisitions, schedules, and contracts or orders should specify the title, number, and date of the specification.

H-3. This specification replaces Picatinny Arsenal Tentative Specification PXS-1071.

H-4. Copies of Federal Specifications (required for Army purchases) and U. S. Army specifications may be obtained as indicated in the "Index of United States Army, Joint Army-Navy, and Federal Specifications Used by the War Department." Copies of this Index may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Agencies within the War Department will obtain copies of U. S. Army and Federal specifications through established War Department channels. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H-5. Copies of Joint Army-Navy specifications and Federal specifications (required for Navy purchases), Navy Department specifications and the Navy Shipment Marking Handbook may be obtained upon application to the Bureau of Supplies and Accounts, Navy Department, Washington 25, D. C., except that Naval activities should make application to the Supply Officer in Command, Naval Supply Depot, Bayonne, N. J. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H-6. Copies of this Joint Army-Navy specification (required for Army purchases) may be obtained from the Office, Chief of Ordnance, War Department, Washington 25, D. C.

Notice.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Army: O.

Navy: OS.

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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 JAN-L-488(0S)	2. DOCUMENT DATE (YYMMDD) 470814
3. DOCUMENT TITLE LEAD CHROMATE (FOR USE IN AMMUNITION)			
4. NATURE OF CHANGE (<i>Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.</i>)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (<i>Last, First, Middle Initial</i>)		b. ORGANIZATION	
c. ADDRESS (<i>Include Zip Code</i>)		d. TELEPHONE (<i>Include Area Code</i>) (1) Commercial (2) DSN (<i>If applicable</i>)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME Commander, Indian Head Division Naval Surface Warfare Center		b. TELEPHONE (<i>Include Area Code</i>) (1) Commercial 301-744-4700 (2) DSN 354-4700	
c. ADDRESS (<i>Include Zip Code</i>) Standardization Team (Code 840M) 101 Strauss Avenue Indian Head, MD 20640-5035		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Standardization Program Office, Attn: DLSC-LM 8725 John J. Kingman Road, Suite 2533 Fort Belvoir, VA 22060-6221 Telephone (703) 767-6888 DSN 427-6888	