

INCH-POUND

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MILITARY SPECIFICATION LEAD AZIDE

This specification is approved for use by the US Army Armament, Research, Development and Engineering Center and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements and quality assurance provisions for the manufacture and acceptance of two types of lead azide for use as a primary explosive (see 6.1).

1.2 Classification. The lead azide, detailed in this specification, shall conform to one of the following types (see 6.2).

Type I - Dextrinated lead azide
Type II - Colloidal lead azide

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues

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 ARDEC, ATTN: SMCAR-BAC-S, Picatinny Arsenal, New Jersey 07806-5000 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

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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).

STANDARDS

MILITARY

- MIL-STD-109 - Quality Assurance Terms and Definitions
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-650 - Explosive: Sampling Inspection and Testing
- MIL-STD-1168 - Lot Numbering of Ammunition
- MIL-STD-1218 - ACS Chemicals

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government publications. The following other Government publication forms a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

CODE OF FEDERAL REGULATIONS

- 49 CFR 100-199 - Department of Transportation Rules and Regulations for the Transportation of Hazardous Materials

(The Interstate Commerce Commission Regulations are now a part of the Code of Federal Regulations, available from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402. Orders for the above publications should cite, "49 CFR 100-199 (latest revision)".)

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).

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AMERICAN SOCIETY FOR TESTING AND MATERIALS

- | | | |
|------------|---|--|
| ASTM D2905 | - | Statement on Number of Specimens Required to Determine the Average Quality of a Textile Material |
| ASTM E70 | - | pH of Aqueous Solutions with Glass Electrode, Test for |
| ASTM E300 | - | Sampling Industrial Chemicals |

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103).

(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 Material. The lead azide shall be manufactured by a process which provides a product conforming to the requirements in this detail specification.

3.2. Color. The lead azide shall be of a white color but shall be no darker than color 37769 in Federal Standard 595 when examined as specified in 4.5.2.

3.3 Dimensions. (for Type 1 only). The lead azide shall be free of needle shaped crystals (needle shape crystals are defined as crystals having a length/diameter of 7/1 or greater) when examined as specified in 4.5.3.

3.4. Particle size. The particle size for Type II shall not exceed 5 microns (for Type II only geometric mean) and the largest particle shall not exceed 10 microns when tested as specified in 4.5.4.

3.5 Chemical and physical properties. Additional chemical and physical properties, for the lead azide, shall conform to the requirements in Table I when tested in accordance with the applicable paragraph.

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TABLE I. Chemical and physical properties.

<u>Property</u>	<u>Requirement</u>		<u>Applicable Test method</u>
	<u>Type I</u>	<u>Type II</u>	
Purity, % min.	91.5	99.0	4.5.5
Acidity, pH	6.0-8.0	6.0-8.0	4.5.6
Water solubility, % max.	1.0		4.5.7

3.6 First article. When specified in the acquisition document (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.7 Workmanship. The manufacturer shall implement procedures and controls to assure that the process and the product produced are not compromised by foreign materials and contaminants or any other conditions which may degrade the composition. Determination of foreign materials shall be in accordance with 4.5.8.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of required inspections, examinations and tests as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspections, examination and tests specified herein, unless disapproved by the Government. In addition, 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 MIL-STD-109 to define terms used herein.

4.1.1 Responsibility for compliance. Lead azide shall meet all requirements of sections 3 and 5. The inspections 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

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indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections. The required inspections specified herein are classified as follows:

- a. First article inspection (see 4.3)
- b. Quality conformance inspection (see 4.4)

4.3 First article inspection.

4.3.1 Submission. When specified in the contract or purchase order, the contractor shall submit a first article sample consisting of one (1) pound of lead azide. The first article sample shall be obtained from the first production lot which has been produced by the contractor, using the same production processes, procedures and equipment as will be used in fulfilling the contract. All raw materials used in producing the lead azide shall be from the same sources as will be used in regular production.

4.3.2 Inspections to be performed. The first article sample may be subjected by the Government to any or all of the examinations or tests specified herein.

TABLE 11. First Article Inspection.
CLASSIFICATION OF CHARACTERISTICS

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FUNCTION	TITLE	SHEET 1 OF 1	DRAWING NUMBER
Characteristics prior to packaging			NEXT HIGHER ASSEMBLY
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH
	Color		4.5.2
	Dimension		4.5.3
	Particle size		4.5.4
	Purity		4.5.5
	Acidity, pH		4.5.6
	Water solubility		4.5.7
	Workmanship		4.5.8
NOTES:			

Replaces 1570, 1 Feb 85, which may not be used.

AHSMC Form 1570b, 1 Jul 89

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4.3.3 Rejection. If the sample fails to comply with any of the applicable requirements, the first article quantity shall be rejected. The Government reserves the right to terminate its inspection upon any failure of a sample to comply with any of the stated requirements.

4.4 Quality conformance inspection.

4.4.1 Inspection lot formation. A lot shall consist of one or more batches produced by one manufacturer, in accordance with the same specification, or same specification batch under one continuous set of operating conditions. Each batch shall consist of that quantity of lead azide that has been subjected to the same unit chemical or physical process intended to make the final product homogenous. The criteria and procedure for the assignment of lot numbers shall be in accordance with MIL-STD-1168.

4.4.2 Examination and tests.

4.4.2.1 Classification of characteristics. Quality conformance examinations and tests are specified in the following classification of characteristics paragraphs. The contractor's quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the specification requirements utilizing as a minimum the conformance criteria specified herein.

QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

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DRAWING	TITLE	SHEET 1 OF 1		DRAWING NUMBER	
4.4.2.1.1	Chemical and physical characteristics			NEXT INSPECTION ASSEMBLY	
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE	
<u>Critical</u>	None defined				
<u>Major</u>					
101	Color	4.4.3.2	3.2	4.5.2	
102	Dimension (Type I only)	4.4.3.2	3.3	4.5.3	
103	Particle size (Type II only)	4.4.3.3	3.4	4.5.4	
104	Purity	4.4.3.3	3.5	4.5.5	
105	Acidity, pH	4.4.3.2	3.5	4.5.6	
106	Water solubility	4.4.3.3	3.5	4.5.7	
<u>Minor</u>					
201	Workmanship	4.4.3.2	3.7	4.5.8	
NOTES:					

Replaces 1570, 1 Feb 85, which may not be used.

AMSQC Form 1570b, 1 Jul 89

QUALITY CONFORMANCE INSPECTION
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PARTICULARS	TITLE	SECTION	DRAWING NUMBER	NEXT INSPECTION ASSEMBLY
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u> 001 <u>Major</u> 101 102 103 <u>Minor</u>	None defined Lead azide improperly or insufficiently wet Cloth cap missing, torn or improperly positioned Bag pierced or torn Bag improperly closed None defined	100% 100% 100% 100%		5.1.1/Visual, prior to closing 5.1.1/Visual, prior to closing 5.1.1/Visual, prior to packing 5.1.1/Visual, prior to packing
NOTES:				

AMSQC Form 1570b, 1 Jul 89

Replaces 1570, 1 Feb 85, which may not be used.

QUALITY CONFORMANCE INSPECTION
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CLASSIFICATION	TITLE	SHEET 1 OF 1	DRAWING NUMBER	
			NEXT HIGHER ASSEMBLY	
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>	None defined			
<u>Major</u>				
101	Cloth cap missing, torn or improperly positioned	100%		5.1.1/Visual, prior to closing
102	Insufficient alcohol/water covering inner bag	100%		5.1.1/Visual, prior to closing
103	Bag improperly closed	100%		5.1.1/Visual, prior to packing
104	Bag pierced or torn	100%		5.1.1/Visual, prior to packing
<u>Minor</u>	None defined			
NOTES:				

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Replaces 1570, 1 Feb 85, which may not be used.

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FUNCTION	TITLE	SHEET 1 OF 1	DRAWING NUMBER
4.4.2.1.4	Bag, cotton duck		NOT REQUIR ASSEMBLY
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH
<u>Critical</u>	None defined		
<u>Major</u>			
101	Rubber cloth cap missing	100%	5.1.1/Visual, prior to closing
102	Bag pierced or torn	100%	5.1.1/Visual, prior to closing
103	Bag improperly closed	100%	5.1.1/Visual, prior to packing
104	Marking missing or incorrect	100%	5.1.1/Visual, prior to packing
<u>Minor</u>	None defined		
NOTES:			

ANSI Form 1570b, 1 Jul 89

Replaces 1570, 1 Feb 85, which may not be used.

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DRAWING	TITLE	SHEET 1 OF 1		DRAWING NUMBER
4.4.2.1.5	Bag, rubber cloth			NEXT INSPECTION ASSEMBLY
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>	None defined			
<u>Major</u>	Insufficient water/alcohol covering unit bags	100%		5.1.1/Visual, prior to closing
101	Bag improperly closed	100%		5.1.1/Visual, prior to packing
102	Bag pierced or torn	100%		5.1.1/Visual, prior to packing
103	None defined			
<u>Minor</u>				
NOTES:				

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Replaces 1570, 1 Feb 85, which may not be used.

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INDICATOR	TITLE	SECTION		DRAWING NUMBER
4.6.2.1.6	Bag, grain			NEXT INSPECTION
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Critical</u>	None defined			
<u>Major</u>	Bag improperly closed	100%		5.1.1/Visual, prior to packing
101	None defined			
<u>Minor</u>				
NOTES:				

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Replaces 1570, 1 Feb 85, which may not be used.

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PART/WH	TITLE	SHEET 1 OF 1		DRAWING NUMBER	
		EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
4.4.2.1.7	Bag, jute liner				NEXT HIGHER ASSEMBLY
<u>Critical</u>					
001	None defined				
<u>Major</u>					
101	Enclosed grain bag incompletely surrounded by sawdust	100%			5.1.1/Visual, prior to closing
102	Sawdust insufficiently saturated with water/alcohol	100%			5.1.1/Visual, prior to closing
103	Jute bag torn	100%			5.1.1/Visual, prior to packing
104	Jute bag improperly closed	100%			5.1.1/Visual, prior to packing
<u>Minor</u>	None defined				
NOTES:					

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Replaces 1570, 1 Feb 85, which may not be used.

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CLASSIFICATION OF CHARACTERISTICS

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INDICATOR	TITLE	SHEET 1 OF 1	DRAWING NUMBER	
				NEXT INCH IN ASSEMBLY
4.4.2.1.8	Container, drum or barrel			
<u>CLASSIFICATION</u>	<u>EXAMINATION OR TEST</u>	<u>CONFORMANCE CRITERIA</u>	<u>REQUIREMENT PARAGRAPH</u>	<u>INSPECTION METHOD REFERENCE</u>
<u>Critical</u>				
001	Drum or barrel leaking	100%		5.1.1/Visual
002	Marking misleading or unidentifiable	100%		5.1.1/Visual
<u>Major</u>				
101	Container improperly closed or sealed	100%		5.1.1/Visual
<u>Minor</u>				
201	Markings blurred or of poor quality	100%		5.2/Visual
202	Bare spot, other than slight scratches, on exterior (applicable to metal container)	100%		5.2/Visual
<u>NOTES:</u>				

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Replaces 1570, 1 Feb 85, which may not be used.

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4.4.3 Testing. PRECAUTION: This specification covers sampling and testing of toxic and hazardous material. Accordingly, it is emphasized that all applicable safety rules, regulations and procedures must be followed in handling and processing the lead azide.

4.4.3.1 Sampling. Obtain two random 30 gm samples from each batch of lead azide being submitted for inclusion in a lot. The samples shall be obtained from the process vessel prior to packout using procedures described in ASTM-E300 for slurries.

4.4.3.2 Testing for batch acceptance. One sample obtained according to 4.4.3.1 from each batch shall be tested in accordance with the applicable test methods of 4.5 for conformance with the requirements for color (see 3.2), dimension (see 3.3), acidity, pH (see 3.5) and workmanship (see 3.7). If any sample fails to meet any of these requirements, the batch represented by the sample shall be rejected. Rework of non-conforming batches is permitted.

4.4.3.3 Testing for lot acceptance. The second samples from the batches not rejected under the provisions of 4.4.3.2 shall be placed in a suitable container of sufficient volume to hold a composite sample from all batches in the lot. The composite sample shall be thoroughly mixed to assure homogeneity, and two sub-samples of approximately 30 gm each shall be obtained from this composite sample. Both sub-samples shall be tested in accordance with the applicable test methods of 4.5 to determine conformance with the requirements for particle size (see 3.4), purity (see 3.5) and water solubility (see 3.5). If either sub-sample fails to meet any of the test requirements, the lot represented by the composite sample shall be rejected.

4.4.4 Inspection equipment. For the performance of all test and examinations specified in 4.3 and 4.4, the equipment specified shall be employed. The contractor shall have the equipment available, utilize it in accordance with the test method, and is responsible to assure that it is properly calibrated. Government approval of all contractor designed inspection equipment is required prior to its use for acceptance testing (see 6.4).

4.5 Methods of inspection. All tests described in this section shall be performed using prescribed procedures for replicate determination given in standard analytical chemistry textbooks or ASTM D 2905. Unless otherwise specified herein, all chemicals shall be Reagent Grade or ACS Grade in accordance with MIL-STD-1218. If these grades are not available, all chemicals shall be the highest purity grade commercially available. See 6.5 for the use of equivalent test methods.

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4.5.1 Preparation of dry sample. Transfer a portion of about 25 gms of the wet sample obtained in 4.4.3.1 to a Buchner funnel fitted with a medium porosity filter paper. Aspirate the sample and retain the water collected for the pH determination in 4.5.6. Dry the sample in an oven maintained at 70-75°C for approximately two hours or until constant weight is obtained. Use this dry sample for the following determinations unless otherwise specified.

4.5.2 Color. Remove a sufficient quantity of sample (for color and dimension) from a well stirred slurry of lead azide obtained in 4.4.3.1 and spread over an area of four sq. cm. on a glass microscope slide. Allow to air dry. Under reflected light, examine the material on the slide for color and impurities using a magnification of approximately 300 times (300X).

4.5.3 Dimension. (for Type I only). Examine the slide prepared in 4.5.2 using a minimum magnification of 150 times and reflected light for presence of needle shaped crystals. Measure the longest dimension of the crystal with the aid of a mechanical stage. For this examination, use transmitted and reflected light and an ocular micrometer which has been calibrated by means of the stage micrometer. Consider the longest dimension to be the distance between the two most remote points of any one crystal. A minimum of 100 crystals shall be examined.

4.5.4 Particle size. (for Type II only).

4.5.4.1 Preparation of sample. Transfer approximately one gm of sample slurry obtained in 4.4.3.1 to a filtering crucible of very fine porosity (Selas Number 3001 or equivalent). Wash the specimen with three 20 mL portions of ethyl alcohol. Aspirate the washed sample until the odor of alcohol can no longer be detected. Use this sample for the particle size determination.

4.5.4.2 Procedure. Determine the particle size using Method 206.1 of MIL-STD-650.

4.5.5. Purity.

4.5.5.1 Procedure. Determine purity of the lead azide by measuring the nitrogen gas evolved using Method 407.1, MIL-STD-650 (Eudiometer method).

4.5.5.2 Alternate method.

4.5.5.2.1 Apparatus. Assemble the apparatus shown in Figure 1 or equal. Gas burette (A) and leveling bulb (B) are filled with water saturated with nitrogen gas. The circulation

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pump (C) maintains a constant temperature by circulating water from the reservoir, which serves as a jacket for the reaction flask, to the jacket of the gas burette.

4.5.5.2.2 Procedure. Accurately weigh 1.9 gm of the sample, dried as per 4.5.1 to the nearest mg in a weighing cup. Add 75 mL of 15% ceric ammonium nitrate solution to the reaction chamber (D). Open the three-way stopcock (F) to the atmosphere and the system and purge for 5 minutes using dry nitrogen gas injected through sample insertion port (E), bubbling the nitrogen through the ceric ammonium nitrate solution to saturate the solution also. After the 5 minute purge with nitrogen gas, remove the nitrogen flow and equalize the pressure in the entire system by using the leveling bulb (B) and adjusting the level of the water in the gas burette so that the meniscus is at the zero mark. Add 125 mL of 10% sodium hydroxide solution to the carbon dioxide absorption flask (G) from the burette (H). Close the three-way stopcock (F) to the atmosphere and then place the weighing cup containing the sample into the sample holder (K). Insert into the sample insertion port being certain the closure joint is gas tight. Turn the holder slowly so that the sample drops into the solution gently. Allow the reaction to go to completion. Completion of the reaction is indicated when the additional volume of gas generated is less than 1 mL for a 15 minute period. Adjust the level of the water in the gas burette (A) and the water in the leveling bulb (B) to the same height and record the volume of gas generated. Also, at that time, record the following: the temperature of the water jacket to the nearest 0.1°C, the barometric pressure (by a mercury barometer) and the room temperature.

4.5.5.2.3 Calculation. Calculate the percent lead azide using the following formula:

$$\text{Percent lead azide} = \frac{(0.1558) (A) (B-C-D)}{(273+T) W}$$

Where:

- A = Volume of gas in burette, mL.
- B = Barometric pressure, mm mercury.
- C = Temperature correction for barometer, mm (see 4.5.5.2.3.1)
- D = Water vapor pressure correction, mm (see 4.5.5.2.3.1).
- T = Temperature of water jacket, °C.
- W = Weight of dry sample, gm.

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4.5.5.2.3.1 Pressure measurement correction. A barometric pressure correction must be made to account for the expansion of mercury and of the calibrated millimeter scale. Tables for this correction are provided by the equipment manufacturer and can also be found in various chemical and technical handbooks. A correction must also be made for the vapor pressure of water in the volumetric system. Water vapor pressure tables can be found in chemical handbooks.

4.5.6 Acidity as pH. Determine the pH of the water collected in 4.5.1 in accordance with the method in ASTM-E70.

4.5.7 Water solubility (for Type I only). Pipette a 50 mL portion of the supernatant water from 4.4.3.1 directly into a tared evaporation dish. If suspended material is present, filter the water prior to use. Evaporate the contents of the dish on a steam bath oven and then dry in an oven for 1 hour at 90-100°C or until constant weight is attained, cool in a desiccator and weigh.

Calculate water solubility as follows:

$$\text{Water solubility, \%} = \frac{(A-B) \times 100}{50}$$

Where:

A = Weight of evaporating dish plus residue, gm.

B = Weight of evaporating dish, gm.

4.5.8 Workmanship. The product shall be visually inspected for the presence of foreign material during sampling and during the microscopic examination (see 4.5.2).

5. PACKAGING

5.1 Packing. Lead azide shall be packed in a wet condition as directed in 49 CFR 100-199. A mixture of water plus denatured ethyl alcohol in such proportions to prevent freezing shall be used unless otherwise directed.

5.1.1 Level A. Up to 25 lbs (dry weight) of lead azide shall be packed wet (per 5.1) directly into a cambric diaper or similar cloth bag. A cap of the same diameter and fabric as the bag shall be placed inside the bag and over the lead azide. The bag shall then be tied closed and placed inside a bag made of conductive velostat. This velostat bag shall then be filled with the water/alcohol mixture which meets requirements of 5.1. This water/alcohol mixture must completely cover the bag contents.

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The velostat bag is then tied closed and placed inside a 4 oz. or heavier duck bag. A cap of the same material and of the same diameter as a duck bag shall be placed over the velostat bag. The duck bag is then securely tied closed. This bag is now the unit bag which shall be marked in accordance with 5.2. An appropriate number of unit bags such that the combined total dry weight of lead azide shall not exceed 150 pounds shall be placed into a rubber cloth bag. Inside this bag and over the unit bags of lead azide shall be placed a cap of the same fabric and same diameter as this bag. This rubber cloth bag shall then be filled with a water/alcohol mixture meeting requirements of 5.1 so that the unit bags inside are completely covered. The bag is then securely tied closed. This rubber cloth bag shall be placed inside a strong grain bag which shall then be securely tied closed. The grain bag and its contents shall be packed in the center of a Department of Transportation Specification 5 or 5B metal drum or barrel which has been lined with a heavy, close-fitting, jute bag. The grain bag shall be entirely surrounded by not less than three inches of well-packed sawdust saturated by the previously referenced water/alcohol mixture. The jute bag shall then be closed by secure sewing to prevent the escape of the sawdust. After closure of the barrel or drum, the package shall be inspected carefully and all leaks stopped. The dry weight of lead azide in one outside container shall not exceed 150 pounds.

5.1.2 Level B. Level B shall be the same as Level A.

5.1.3 Level C. Level C shall be the same as Level A except DOT Specification 17H metal drum (single trip), as specified in CFR, Title 49, may be used.

5.2 Marking. Markings shall be in accordance with CFR 49 and MIL-STD-129. Markings shall be not less than one-fourth (1/4) inch, nor more than one-half (1/2) inch in height. DOT markings must be one-half (1/2) inch in height. Ink shall conform to that specified in MIL-STD-129 and a contrasting color to the bag.

5.2.1 Unit container. Each unit bag as defined in 5.1.1 shall be marked with the following:

- a. Lead Azide
- b. Quantity (dry weight) in pounds
- c. Lot number

As an alternative, each unit bag may be identified by using a waterproof tag that is marked with the above information, imprinted with a suitable water/alcohol proof ink.

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5.2.2 Exterior container. The side and top of each drum or barrel shall be marked: "INITIATING EXPLOSIVE - DANGEROUS - DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVE."

The following additional information will be marked on the side of each drum or barrel:

- a. NSN/NATO Stock number
Type I: 1376-00-628-3328
Type II: 1376-01-052-4141
- b. Lead Azide
- c. Quantity (net weight in pounds)
- d. Lot number
- e. Gross weight
- f. Any special cautionary marking and labeling

6. NOTES

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

6.1 Intended use. The lead azide described in this specification is intended as a component in percussion caps, detonators, blasting caps, fuzes and priming compositions. Lead azide is classified as a high explosive. All necessary precautions in the manufacture, handling and storage of such materials should be observed.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this detail 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 and 2.2).
- c. Type of lead azide required.
- d. First article requirements (see 3.6, 4.3 and 6.3).
- e. Level of packing protection required.

6.3 First article. When first article inspection is required the contracting officer should specify that the contractor submit a first article sample as specified in 4.3.1. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government and that bidders offering such products, who wish to

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rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Submission of inspection equipment designs for approval. Submit contractor equipment designs, as required, to: Commander, SMCAR, ATTN: SMCAR-QAR-R, Picatinny Arsenal, NJ 07806-5000 (see MIL-A-48078).

6.5 Equivalent test methods. The test methods given in this specification are the official methods to be used. The contractor may request to use other method(s) providing that the proposed method is as a minimum, equivalent (accuracy and precision) to the method given in this specification. Prior approval of the contracting officer is required for use of equivalent test methods. A description of the proposed method should be submitted through the contracting officer to Commander, SMCAR-QAR-R, Picatinny Arsenal, NJ 07806-5000. This description should include the procedures used, the accuracy and precision of the method, test data to demonstrate the accuracy and precision and drawings of any special equipment required.

6.6 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 Government mailing addresses for submission of data are listed in FED-STD-313.

6.7 Change from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:
Army (AR)

Preparing activity:
Army-AR
(Project 1376-0413)

Review activities:
Navy - OS

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
MIL-L-3055C

2. DOCUMENT DATE (YYMMDD)
930112

3. DOCUMENT TITLE

LEAD AZIDE

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets if 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 U.S. ARMY ARDEC
STANDARDIZATION OFFICE

b. TELEPHONE (Include Area Code)
(1) Commercial 201-724-6675
(2) AUTOVON DSN-880-6675

c. ADDRESS (Include Zip Code)

ATTN: SMCAR-BAC-S
PICATINNY ARSENAL, NJ 07806-5000

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