

MIL-P-85662(AS)

22 July 1985.

## MILITARY SPECIFICATION

PROPELLANT, BALL, 25 MM, ARMOR PIERCING

INCENDIARY (API), PGU-20/U

This specification is approved for use by the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE.

1.1 Scope. This specification establishes the requirements for one type of propellant for use in 25 millimeter (mm) cartridges, PGU-20/U Armor Piercing Incendary (API).

## 2. APPLICABLE DOCUMENTS.

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form apart of this specification to the extent specified herein.

## SPECIFICATIONS

## Military

MIL-N-244

Nitrocellulose.

MIL-A-2550

Ammunition, General Specification  
for.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Systems Engineering and Standardization Department (SESD), Code 93, Lakehurst, NJ 08733, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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## STANDARDS

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-109	Quality Assurance Terms and Definitions.
MIL-STD-286 .	Propellants, Solid; Sampling, Examination and Testing.
MIL-STD-1168	Lot Numbering of Ammunition.

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

## DRAWINGS

U.S. Army Armament Research and Development Command  
(Code Ident 19200)

20-4-77	Packing and Marking of Box, Packing, for Smokeless Powders.
76-4-46	Box, Packing, Metal Liner (Copper), M24, for Smokeless Powders.
76-4-56	Box, Packing, Metal-Wood, M17 for Smokeless Powders.
7549033	Container, Metal, Universal, M25 for Propellant and Explosives, Assembly and details.
8858577	Marking Diagram and Sealing Container, Metal, Universal, M25 for Shipping of Propellant.
8858848	Marking Diagram and Sealing of Metal Lined Wooden Packing Boxes for Shipment of Propellant.
9256486	Container, Packing PA 54, Wood with Metal Liner (Modified M24 Box for Smokeless Powder).

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Naval Air System Command  
(Code Ident 30003)

1397AS138

Propellant, Ball, 25 mm, API,  
PGU-20/U.

1397AS190

Cartridge, 25 mm, API, PGU-20/U.

PUBLICATIONS

Fighting Vehicle Systems

AS12013566

25-Millimeter Ammunition Ballistic  
Test Methods.

Code of Federal Regulations (CFR)

49 CFR 171-190

Hazardous Materials Regulations,  
Department of Transportation.

DoD Manual 4145.26M

Safety Manual.

(Application for copies of Code of Federal Regulations should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.)

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

2.1.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS.

3.1 Chemical and physical properties. The chemical and physical properties of the propellant shall be as specified in Drawing 1397AS138.

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3.1.1 Air space. The propellant charge weight that is required to achieve the ballistic requirements of 3.2 and that conforms to the requirements of Drawing 1397AS190 shall result in an air space in the primed cartridge case, which shall permit the insertion of the API projectile into the charged case without any vibration or tamping to cause compaction of the propellant charge.

3.1.2 Nitrocellulose. Unless otherwise specified in the contract or purchase order (see 6.2.1), nitrocellulose recovered from the rework of propellants or new nitrocellulose with the nitrogen content not fully meeting the requirements of MIL-N-244 may be used in lieu of, or in combination with, complying nitrocellulose. Propellant so manufactured shall comply with all chemical, physical, and ballistic requirements.

3.2 Internal ballistic performance. The propellant's internal ballistic performance shall be sampled as specified herein when loaded into representative API Cartridges conforming to Drawing 1397AS190 and fired in the approved specified GAU-12/U single-shot barrel and test fixture.

3.2.1 Muzzle velocity. The average muzzle velocity of the sample cartridges, conditioned at 18 to 24 degrees Celsius ( $^{\circ}\text{C}$ ), shall be not less than 1,000 meters per second (m/s). The sample standard deviation (see 6.4) shall not exceed 10 m/s. At any cartridge temperature from  $-54$  to  $71^{\circ}\text{C}$ , the projectile muzzle velocity shall be greater than 950 meters per second.

3.2.2 Pressure. The average chamber pressure of the sample cartridges, conditioned at  $18$  to  $24^{\circ}\text{C}$  plus three standard deviations of chamber pressure, shall be not greater than 425 megapascals (MPa). The average chamber pressure of the sample cartridges, when functioning at any individual temperature from  $-54$  to  $+71^{\circ}\text{C}$  plus three standard deviations of chamber pressure, shall be not greater than 476 MPa. Pressure shall be measured with a piezoelectric type pressure transducer or equivalent.

3.2.3 Action time. The action time of the sample cartridges shall be not greater than 6.0 milliseconds (ms) at any cartridge temperature from  $-54$  to  $71^{\circ}\text{C}$ .

3.2.4 Special action time. The action time requirement of 3.2.3 shall also be achieved with the propellant in the "powder-to-bullet" orientation with the ammunition conditioned at  $-54^{\circ}\text{C}$ . A charge weight 3 grams below the established charge weight shall be used.

3.3 Flame temperature. The propellant shall have an isochoric flame temperature of not greater than  $2,800^{\circ}$  Kelvin (K) as determined by the Hirschfelder method of calculation.

3.4 First article sample. When specified, a sample shall be subjected to first article inspection (see 6.2.3).

3.5 Toxic products and safety. Safety regulations and guidelines applicable to the production and use of the propellant shall be complied with to preclude personal injury and damage to equipment and facilities.

3.6 Manufacturing process. When specified in the contract or purchase order (see 6.2.2), the propellant shall be manufactured by a process approved by the contracting officer, and no deviations from that process shall be made without his prior approval.

3.7 Workmanship. The workmanship shall be such that the propellant is uniform in appearance, consistent in high quality, and free from visible contamination.

#### 4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for Inspection. Unless otherwise specified in the contract or purchase order (see 6.2.1), the contractor shall be responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the contractor 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 this specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Classification of inspection. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.1.2).
- b. Quality conformance inspection (see 4.2).

4.1.2 First article inspection. A first article sample consisting of a quantity of propellant specified in the contract or purchase order shall be delivered to the testing activity for first article testing (see 6.2.3). The first article sample shall be manufactured using the same methods, materials, processes, and procedures as used in production. Any production prior to acceptance of the first article sample is at the risk of the contractor. The first article sample shall be taken from the first production lot and the sample shall be submitted in accordance with 3.4. Identification shall be in accordance with MIL-STD-1168.

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4.1.2.1 Examination and test: The tests listed in Table shall be performed on the first article sample in accordance with the test methods prescribed in 4.3. Except-as otherwise specified, tests shall be conducted with samples at  $20 \pm 3^{\circ}\text{C}$ . Approval will be based upon examination and test of the sample as specified in Table I. Sample formation shall be as specified in 4.2.2.

Table I. First article inspection.

Examination or test1/	Sample size			Requi re- ment paragraph	Test paragraph
	Temperature2/				
	-54°C	+2l °C	+71°C		
Chemical and physical3/, 4/				3. 1	4. 3. 1
Air space4/	...	20	...	3. 1. 1	4. 3. 3
Muzzle velocity5/	50	50	50	3. 2. 1	4. 3. 2
Pressure5/	50	50	50	3. 2. 2	4. 3. 2
Action time5/	50	50	50	3. 2. 3	4. 3. 2
Special action time4/	20	...	...	3. 2. 4	4. 3. 2. 3
Flame temperature6/				3. 3	4. 3. 4

<sup>1/</sup> If any individual sample fails to meet the applicable requirements, the first article shall be rejected.

<sup>2/</sup> Tolerance on ammunition conditioning temperature shall be  $\pm 3^{\circ}\text{C}$  except when otherwise indicated.

<sup>3/</sup> Sample size shall be as specified in MIL-STD-286.

<sup>4/</sup> Test performed on composite sample (see 4.2.2).

<sup>5/</sup> Test performed in a 10-round group from each of the five representative samples. Pressure, velocity, and action time tests may be combined on the same sample.

<sup>6/</sup> Calculations performed on composite sample (see 4.2.2).

4.1.2.2 First article sample rejection. Failure of the sample to comply with requirements of this specification shall result in-sample rejection. Determination as to acceptability of any first article sample shall be based upon results of initial tests only and no second tests shall be permitted on that first article.

#### 4.2 Quality conformance inspection.

4.2.1 Inspection sample. The inspection sampling procedures shall be in accordance with MIL-STD-105. Quality assurance terms shall be in accordance with MIL-STD-109.

4.2.1.1 Propellant lot. A propellant lot shall consist of a uniform blend of propellant manufactured by one manufacturer, in one unchanged process, in accordance with the same drawings and drawing revisions and the same specification and specification revision.

4.2.1.2 Lot identification. Each packed propellant lot shall be identified in accordance with applicable drawings and MIL-STD-1168, supplemented as directed by the contracting activity.

4.2.2 Sampling. Random representative samples shall be taken by random selection of one container from each identifiable increment of the lot. A random sample of five containers shall be selected from these representative samples. From each container selected, a sample shall be taken such that the aggregate quantity shall be sufficient for the required tests. These samples shall be poured into clean containers, immediately closed with a hermetic seal, and identified as representative samples with a label showing the container number from which the sample was taken, the lot number, the propellant nomenclature, and the packing date. Prior to conducting lot acceptance tests, these samples shall be permitted to attain room temperature; then equal portions sufficient to make the required quantity of a composite sample shall be taken from each representative sample and blended. The composite sample shall be placed in containers, immediately closed with a hermetic seal, and identified respectively as a composite sample. These containers shall be further identified by the container numbers from which the composite sample was taken, the lot number, the propellant nomenclature, and the packing date. Both the composite sample and the representative sample shall be used to perform the tests specified in Tables I and 11.

4.2.3 Test. The tests listed in Table II shall be performed on each propellant lot in accordance with the test methods prescribed in 4.3. Unless otherwise indicated, tests shall be conducted with samples at  $20^{\circ} \pm 3^{\circ}\text{C}$ . Sample size and acceptance criteria for each test shall be as specified. Only propellant sampled in accordance with 4.2.2 shall be used in the tests. The combining of tests is permitted. When specified in the contract or purchase order (see 6.2.2), testing shall be conducted in accordance with a test procedure prepared by the contractor and approved by the cognizant Government design activity.

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Table II. Quality conformance inspection.

Examination or test <sup>1/</sup>	Sample size			Require- ment paragraph	Test paragraph
	Temperature <sup>2/</sup>				
	-54°C	+21°C	+71°C		
Chemical and physical <sup>3/</sup> , <sup>4/</sup>				3.1	4.3.1
Air space <sup>4/</sup>	...	20	...	3.1.1	4.3.3
Muzzle velocity <sup>5/</sup>	50	50	50	3.2.1	4.3.2
Pressure <sup>5/</sup>	50	50	50	3.2.2	4.3.2
Action time <sup>5/</sup>	50	50	50	3.2.3	4.3.2
Special action time <sup>4/</sup>	20	...	...	3.2.4	4.3.2.3
Flame temperature <sup>6/</sup>				3.3	4.3.4

<sup>1/</sup> Failure of the propellant to comply with the requirements shall be cause for rejection of the lot subject to testing of a second sample for the characteristic(s) in which failure occurred. Failure of the second sample to comply with the requirements for the characteristic(s) under test shall be cause for rejection of the lot.

<sup>2/</sup> Tolerance on ammunition conditioning temperature shall be  $\pm 3^{\circ}\text{C}$  except when otherwise indicated.

<sup>3/</sup> Sample size shall be as specified in MIL-STD-286.

<sup>4/</sup> Test performed on composite sample (see 4.2.2).

<sup>5/</sup> Test performed in a 10-round group from each of the five representative samples. Pressure, velocity, and action time tests may be performed on the same sample.

<sup>6/</sup> Calculation performed on composite sample (see 4.2.2).

4.2.3.1 Unlisted firing defects. The lot shall be suspended and referred to the contracting officer for disposition if a malfunction or casualty not covered by this specification occurring in any firing test indicates that the product is unsuited for the purpose intended.



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4.2.3.1.1 Disposition of rejected lot. Unless otherwise specified in the contract or purchase order (see 6.2.1), first article samples and Production lots which do not meet the inspection and test requirements specified herein shall be disposed of.

4.2.3.2 Packing and marking inspection. Inspection of packing and marking to determine compliance with the requirements of 5.1 shall be as prescribed by the contracting activity.

4.2.4 Inspection equipment. When specified in the contract or purchase order (see 6.2.2), the inspection equipment provisions of MIL-A-2550 shall apply.

4.3 Methods of inspection.

4.3.1 Chemical composition and physical properties. The applicable tests shall be performed in accordance with the procedures set forth in MIL-STD-286.

4.3.2 Internal ballistics performance. Ballistic tests shall be performed in accordance with AS12013566 as applicable, except the approved single-shot GAU-12/U barrel and test fixture shall be used. Projectiles that simulate the PGU-20/U projectile may be used.

4.3.2.1 Loading of test cartridges. The propellant samples selected in accordance with 4.2.2 shall be used to load test cartridges with the charge weight established to obtain the required ballistics. The variation in established charged weight between each group of representative samples shall not exceed 2.0 grams. The test cartridges shall be loaded by a method capable of maintaining propellant charge weight uniformity or  $\pm 0.1$  gram for the selected charge weight.

4.3.2.2 Velocity correction factor. A correction factor of 0.40 m/s per meter shall be added to the recorded velocity at the measured range to obtain muzzle velocity.

4.3.2.3 Loading for special action time. The composite sample shall be used to perform the special action time test at a charge weight 3 grams below the established charge weight for the composite sample.

4.3.3 Air space. The specified propellant charge shall be poured into a primed cartridge case in accordance with MIL-STD-286, Method 508.1.2. Insert the projectile into the case mouth until it is completely seated without any vibration or tamping of the components. The air space shall meet the requirements of 3.1.1.

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4.3.4 Flame temperature. The propellant flame temperature is computed from the formula:

$$T = 2500 + \frac{\sum Y_i E_i}{\sum Y_i C_i} \text{ (}^\circ\text{K)}$$

where

T = propellant flame temperature,  $^\circ\text{K}$

$Y_i$  = constituent weight, percent

$E_i$  and  $C_i$  are constants as shown below.

<u>Constituent</u>		<u><math>C_i</math></u>	<u><math>E_i</math></u>
Nitrocellulose	13.10% N	0.3424	275.45
	13.11% N	0.3423	276.98
	13.15% N	0.3421	283.10
	13.20% N	0.3418	290.25
	13.22% N	0.3417	293.81
	13.23% N	0.3416	295.30
	13.25% N	0.3415	296.87
Nitroglycerine		0.3438	952.00
Dinitrotoluene		0.3210	-668.00
Diphenylamine		0.3471	-3009.00
Water		0.6403	-1552.00
Ethyl acetate		0.4879	-2785.00
Calcium carbonate		0.1250	-800.00
Sodium sulfate		0.1250	-800.00
Graphite		0.1349	-3224.00
Potassium nitrate		0.2158	-24.9
Tin oxide		0.0421	-111.00
Diethyl phthalate		0.4258	-2656.00

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A sample calculation is shown below.

<u>Constituent</u>	<u>Y<sub>i</sub></u>	<u>C<sub>i</sub></u>	<u>Y<sub>i</sub>C<sub>i</sub></u>	<u>E<sub>i</sub></u>	<u>Y<sub>i</sub>E<sub>i</sub></u>
NC	78.4	0.3421	26.8	283.1	22,195
NG	10.0	0.3438	3.4	952.00	9,520
DPA	1.0	0.3471	0.3	-3,009.00	-3,009
DNT	0.6	0.3210	0.2	-668.00	-401
DBP	7.5	0.4258	3.2	-2,565.00	-19,920
CaCO <sub>3</sub>	0.1	0.1250	...	-800.00	-80
Na <sub>2</sub> SO <sub>4</sub>	0.2	0.1250	...	-800.00	-160
KNO <sub>3</sub>	1.0	0.2158	0.2	24.9	25
Graphite	0.2	0.1349	...	-3,224.00	-645
H <sub>2</sub> O*	0.5	0.6403	0.3	-1,552.00	-776
E <sub>T</sub> AC*	0.5	0.4879	0.2	-2,785.00	-1,393

\*Total moisture and volatiles (solvent) equal approximately 1.0 percent.

$$T = 2500 + \frac{\sum Y_i E_i}{\sum Y_i C_i} \text{ } ^\circ\text{K} = 2500 + \frac{5356}{34.6} \text{ } ^\circ\text{K}$$

$$= (2500 + 155)^\circ\text{K} = 2655^\circ\text{K}$$

## 5. PREPARATION FOR DELIVERY.

5.1 Packing - Level A. (Worldwide shipment and/or long term storage.) Unless otherwise specified in the contract or purchase order (see 6.2.1), the propellant shall be packed in clean airtight containers conforming to Drawing 76-4-46, 76-4-56, 9256486, or 7549033.

5.1.1 Containers. Immediately prior to packing, containers listed in 5.1 shall be subjected to an internal pressure of 1/2 to 1 pound per square inch (psi) by a method satisfactory to the contracting officer's representative. A water manometer shall be assembled in the system. A drop of 0.7 inch or more on the manometer in 15 seconds shall be cause for rejection and the container shall be removed from the lot.

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5.2 Packing - Level B. Packing shall be as specified in 5.1.

5.2.1 Packing - Level C. (CONUS shipment and/or short term storage.) Unless otherwise specified in the contract or purchase order, the propellant shall be packed in standard commercial containers in accordance with Code of Federal Regulation 49 CFR 171-190 acceptable by common or other carrier for safe transportation to the point of delivery.

5.3 Marking.

5.3.1 Levels A and B. The containers shall be sealed and marked in accordance with Drawings 20-4-77, 8858577, or 8858848. Markings shall also include the date of manufacture of the propellant (month and year).

5.3.2 Level C. Containers shall be marked on the top and side with the same markings as required for the top and side of the box as shown on Drawing 8858848. Markings shall also include the date of propellant manufacture (month and year).

5.3.3 Special marking. All packed containers (Levels A, B, or C) shall have a printed label affixed to the side with the following information:

NOTICE

After 5 years from date of manufacture,  
approval by the responsible engineering  
agency is required prior to the loading  
of this propellant into small arms  
ammunition.

6. NOTES.

6.1 Intended use. Propellants procured under this specification are intended to be used in 25 mm PGU-20/U (API) cartridges.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should, as a minimum, specify the following.

- a. Title, number, and date of this specification.
- b. Use of reworked nitrocellulose, if permitted (see 3.1.2).
- c. Place of inspection, if not at place of manufacture (see 4.1).

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- d. Disposition of rejected samples and production lot (see 4.2.3.1.1).
- e. Detailed packing and marking instructions (see Section 5).

6.2.2 Data requirements. When this specification is used in an acquisition which incorporates a DO Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below should be developed as specified by an approved Data Item Description (DID) (DD Form 1664) and delivered in accordance with the approved CDRL incorporated into the contract. When the provisions of DAR 7-104.9(n)(2) are invoked and the DD Form 1423 is not used, the data specified below should be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification is cited in the following paragraphs.

<u>Paragraph no.</u>	<u>Data requirements title</u>	<u>Applicable DID no.</u>	
3.6	Description of Manufacture	DI-P-1614	---
4.2.4	Inspection records	DI-T-2072	---

(Copies of DIDs required by contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.2.3 First article. When a first article inspection is required, the item will be tested and should be a first article sample. The first article should be a quantity of propellant as specified in the contract or purchase order (see 3.4 and 4.1.2). The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

### 6.3 Waivers and deviations.

6.3.1 First article inspection sample. The contracting activity may waive the requirement for a first article inspection sample if the contractor has recently demonstrated his ability to produce this item.

6.3.2 Process deviation. A process deviation is defined as a change in the approved basic method of manufacture, or an operational change which may alter the metallurgical or physical properties of the item.

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6.4 Computations for standard deviation. Where computation of a sample standard deviation is specified for determination of lot-acceptance, the method of computation will be:

$$S = \frac{\sum (x_i - \bar{x})^2}{(n - 1)} \quad \text{or equivalent}$$

where:

$x_i$  = each individual value

$\bar{x}$  = sample arithmetic mean

$n$  = sample size

6.5 Combining tests. Tests may be performed concurrently on the sample cartridge provided that the test results are not affected by this procedure to minimize testing costs.

6.6 Submission of inspection equipment designs for approval. Submit equipment designs as required to Commander (AIR-54112F), Naval Air Systems Command, Washington DC, and Commander (Code 2142), Pacific Missile Test Center, Pt Mugu, CA 93042. In request letter of submittal, state contractor, contract number, specification number, item nomenclature, and classification of defect or test paragraph.

6.7 Submission of results of contractor-conducted examinations and tests. Unless otherwise specified by the contracting officer, the contractor should forward requested records of examinations or tests to Commander (AIR-54112F), Naval Air Systems Command, Washington DC, and Commander (Code 2142), Pacific Missile Test Center, Pt Mugu, CA 93042.

6.8 Drawings. Drawings listed in Section 2 of this specification under the heading U.S. Army Armament Research and Development Command (ARRADCOM) may also include drawings prepared by, and identified as, Edgewood Arsenal, Frankford Arsenal, Rock Island Arsenal, or Picatinny Arsenal drawings. Technical data originally prepared by these activities is now under the cognizance of AMCCOM.

Preparing Activity  
Navy-AS

(Project No. 1305-N007)

**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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**STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL***(See Instructions - Reverse Side)***1. DOCUMENT NUMBER**  
MIL-P-85662 (AS)**2. DOCUMENT TITLE**  
Propellant; Ball, 25 mm, Armor Piercing Incendiary (API)**3a. NAME OF SUBMITTING ORGANIZATION****4. TYPE OF ORGANIZATION (Mark one)**☐ VENDOR☐ USER☐ MANUFACTURER☐ OTHER (Specify): \_\_\_\_\_**b. ADDRESS (Street, City, State, ZIP Code)****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)**