MIL-P-217A
19 SEPTEMBER 1962
SUPERSEDING
JAN-P-217
29 MAY 1945

MILITARY SPECIFICATION

POTASSIUM PERCHLORATE

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 Scope. This specification covers two grades and five classes of potassium perchlorate.

1.2 Classification. The material shall be of the following grades and classes as specified in the contract or order (see 3.2, 3.3 and 6.2).

Grade A	— Low moisture content
Grade B	— High moisture content
Class 1	— Through U.S. Standard Sieve No. 40
Class 2	— Through U.S. Standard Sieve No. 100
Class 3	— Through U.S. Standard Sieve No. 80 and No. 200
Class 4	— Average particle diameter in microns, 20 plus or minus 5
Class 5	— Average particle diameter in microns, 70 plus or minus 30

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.

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
MIL-STD-1233	— Procedure for Determining Particle Size, Particle Size Distribution, and Packed Density of

FSC: 6810

Powdered Materials

PUBLICATIONS

ORDNANCE CORPS

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

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

2.2 **Other publications.** The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

INTERSTATE COMMERCE COMMISSION

49 CFR 71–90 — Interstate Commerce Commission Rules and Regulations for the Transportation of Explosives and Other Dangerous Articles

(The Interstate Commerce Commission regulations are now a part of the Code of Federal Regulations (1949 Edition-Revised 1956) available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. Orders for the above publications should cite "49 CFR 71–90 (Rev. 1956.")

3. REQUIREMENTS

3.1 **Color.** The potassium perchlorate shall be a white crystalline solid. The material shall be examined as specified in 4.3.1.

3.2 **Chemical properties.** The potassium perchlorate shall conform to the chemical requirements shown in table I, when tested as specified in the applicable paragraphs.

3.3 **Particle size.** The material shall conform to the particle size requirements as specified in table II, when tested as specified in the applicable paragraphs.

TABLE I. *Chemical requirements*

Requirements	Percent by weight		Test method
	Grade A	Grade B	
Moisture, maximum (max.)	0.02	0.04	4.3.2
Chlorides (as KCl), max.	0.10	0.10	4.3.5
Chlorates (as $KClO_3$), max.	0.10	0.086	4.3.6
Hypochlorites	None	None	4.3.7
Bromates as ($KBrO_3$), max.	0.02	0.004	4.3.8
Sodium as ($NaClO_4$), max.	0.20	0.20	4.3.9
Calcium and Magnesium salts (as oxides), max.	0.20	0.080	4.3.10
Grit and Water insoluble material, max.	0.02	0.02	4.3.3

TABLE I.—Continued.

Requirements	Percent by weight		Test method
	Grade A	Grade B	
Iron as (Fe_2O_3), max.	.....	0.004	4.3.11
pH of water solution	7.0 plus or minus 1.5	7.0 plus or minus 1.5	4.3.4
Assay $KClO_4$, minimum (min.)	99.0	99.0	4.3.12

TABLE II. *Particle size*

U.S. standard sieves Class	Percent passing by weight			Average particle diameter (microns)		Test methods
	1	2	3	4	5	
420 micron No. 40	99.9	.....	.....	.....	.....	4.3.13.1
177 micron No. 80	.....	.....	99 min.	.....	.....	4.3.13.1
149 micron No. 100	.....	99.9	.....	.....	.....	
74 micron No. 200	.....	.....	80–90	.....	.....	4.3.13.1
				20 plus or minus 5		4.3.13.2.1
				70 plus or minus 30		4.3.13.2.2

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 and 4.3 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 nonconforming 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 nor 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 contractors 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 affects the degree of assurance required by this specification or other documents referred to 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 statement 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.

(e) Certificates of analysis on all material procured directly by the contractor when such material is controlled by Government specifications listed in any of the contractual documents.

(f) Quantity of product in the lot.

(g) Date 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 detailed 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 referred to 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, re-sampling, re-instruction 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 nonconforming material.

4.1.3.2 *Product inspection.* Product inspection shall consist of Government inspection, when necessary, of a 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 the potassium perchlorate offered for acceptance at one time, which has been produced by one manufacturer under essentially the same manufacturing conditions and with no change in materials, provided the operation is continuous. In the event that the process is a batch operation, each batch shall constitute a lot (see 6.3).

4.2.2 *Examination.* Sampling plans and procedures for the following classification of defects shall be in accordance with Standard MIL–STD–105. Continuous sampling plans, in accordance 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.

4.2.2.1 *Sealed container (all classes).*

Categories	*Defects*	*Method of inspection*	*Code No. (see 6.4).*
Critical:	None defined		
Major:	AQL 0.65 percent		
101.	Container not filled to correct volume	Scale	01001
102.	Seal improper	Visual	01002
103.	Closure improper	Visual	01003
104.	Marking incorrect, incomplete or illegible	Visual	01004
105.	Leak in container	Visual	01005
106.	Foreign matter	Visual	01006
Minor:	None defined		

4.2.3 *Testing.*

4.2.3.1 *Sampling by lot.* Sample containers shall be taken at random from each lot as follows:

Lot size	*Sample size*
1	1
2–275	2
276–545	3
546–900	4
901–1345	5
1346–1875	6
1876–2500	7

Sample size lots exceeding 2500 containers shall be calculated using the following equation:

n = 0.15 times the square root of N

where:

n = Sample size

N = Lot size

A 1 pound specimen shall be removed from each container in the sample and placed in a clear, dry container labeled to identify the lot and container from which it was taken. Each specimen shall be tested as specified in 4.3. If the sample fails to comply the lot shall be rejected.

4.3 **Test methods and procedures.**

4.3.1 *Color.* Each specimen shall be examined visually for conformance to paragraph 3.1. Code No. 02001.

4.3.2 *Moisture.* Transfer a weighed portion of approximately 20 to 25 grams (gms.) of the sample to a tared weighing bottle. Dry the bottle and contents at 130 degrees plus or minus 2 degrees Centigrade (C.) for 3 hours, cool in a desiccator, and weigh. Calculate the loss in weight as percentage of moisture in the sample. Code No. 03001.

4.3.3 *Grit and water insoluble material.* Dissolve an accurately weighed portion of approximately 20 to 25 gms. of the sample in 200 milliliters (mls.) of boiling distilled water and filter the solution through a tared filtering crucible. Wash the insoluble residue on the filter with several portions of hot distilled water until free from perchlorates as indicated by the failure of the washings to develop a violet color when 1 ml. of an 0.3 percent aqueous solution of methylene blue is added. Dry the crucible and contents at 100 degrees — 105 degrees C. for three hours, cool to room temperature in a desiccator, and weigh. Calculate the increase in weight of the crucible as percent grit and water soluble material. Code No. 04001.

4.3.4 *Determination of pH.* Transfer 2.00 plus or minus 0.05 gms. of sample to a 400 ml. beaker. Add 100 mls. of distilled water to the contents of the beaker and stir for several minutes until dissolved. Determine the pH of the solution using a glass electrode pH meter. Code No. 05001.

4.3.5 *Chlorides.* Dissolve a weighed portion of approximately 5 gms. of the sample in mls. of hot distilled water. Make the solution just acid to methyl red indicator with 5 percent nitric acid solution, and then add 1 ml. of a 35 percent nitric acid solution. Filter the solution if necessary. Add 5 mls. of a 1 percent silver nitrate solution and boil until any percipitate coagulates. Transfer the precipitate to a tared filtering crucible and wash with a 1-percent nitric acid solution. Dry the crucible and residue in an oven at 135 degrees C. for at least 2 hours, cool in a desiccator and weigh. Calculate the increase in weight to percentage of potassium chloride in the sample on a moisture-free basis. Code No. 06001.

Percent potassium chloride — 52.01A divided by W

where:

A = weight of residue

W = weight of dry sample

4.3.6 *Chlorates.* Dissolve a weighed portion of approximately 5 gms. of the sample in 100 mls. of hot distilled water. Add 10 mls. of a 4-percent ferrous ammonium sulfate solution, and boil for 5 minutes. Cool the solution to room temperature and filter if necessary. Make the solution just acid to methyl red indicator with 5-percent nitric acid solution, and then add 1 ml. of a 35-percent nitric acid solution. Filter the solution if necessary. Add 5 mls. of a 1-percent silver nitrate solution and boil until any precipitate coagulates. Transfer the precipitate to a tared filtering crucible and wash with a 1-percent acid solution. Dry the crucible and residue in an oven at 135 degrees C. for at least 2 hours, cool in a desiccator and weigh. Calculate the increase in weight to percentage of potassium chlorate in the sample on a moisture free basis, correcting for chlorides and bromates. Code No. 07001.

$$\text{Percent potassium chlorate} = \frac{85.50A}{W-(1.64B+0.96C)}$$

Where:

A = weight of residue

B = percent potassium chlorides

C = percent potassium bromate

W = weight of dry sample

4.3.7 *Hypochlorites.* Dissolve an accurately weighed portion of approximately 10 grams of the sample in 200 mls. of hot distilled water. Add a strip of potassium iodide-starch paper to the solution. Consider the immediate appearance of a blue coloration to indicate the presence of hypochlorites. Code No. 08001.

4.3.8 *Bromates.* Transfer a weighed portion of approximately 10 gms. of the sample to a 500 ml. flask provided with a glass stopper. Add 200 mls. of freshly boiled and cooled distilled water to dissolve the sample. Add 5 mls. of approximately 1:9 hydrochloric acid solution, 5 mls. of freshly prepared 10-percent KI and 5 mls. of starch indicator solution prepared by making a very thin paste of 4 gms. of soluble starch in cooled distilled water mixed into 2 liters of hot distilled water and boiling for a few minutes. (Keep the starch solution in glass-stoppered bottles in a cool, dark place.) Stopper the flask containing the sample and reagents, set in a dark place for 1 hour and titrate with approximately 0.02N sodium thiosulfate until the blue color disappears. Run a blank on the reagent and calculate the percentage of potassium bromate in the sample. Code No. 09001.

Percentage of potassium bromate = $\frac{2.783\ (V-v)N}{W}$

Where:

V = ml. of sodium thiosulfate solution used for sample.

v = ml. of sodium thiosulfate solution used for blank.

N = normality of sodium thiosulfate solution.

W = weight of sample.

4.3.9 *Sodium salts.*

4.3.9.1 *Magnesium uranyl acetate reagent.* Prepare magnesium uranyl acetate reagent as follows: Prepare solution A by dissolving 90 gms. of uranyl acetate, $UO_2(C_2H_3O_2)_2.2H_2O$, in 60 mls. of glacial acetic acid and sufficient distilled water to make a volume of 1 liter by heating to 70 degrees C., and stirring until solution is complete. Prepare solution B by dissolving 600 gms. of magnesium acetate, $Mg(C_2H_3O_2)_2.4H_2O$, in 60 mls. of glacial acetic acid and sufficient distilled water to make a volume of 1 liter by heating to 70 degrees C., and stirring until solution is complete. Mix together solutions A and B while at 70 degrees C., and cool the mixture to 20 degrees C. After allowing the mixture to stand at this temperature for 2 hours, or longer, filter it through a dry filter paper into an amber-colored bottle. Store the bottle containing the solution where it is not exposed to direct sunlight. If a precipitate appears on standing, filter the solution again prior to use. Code No. 10001.

4.3.9.2 *Alcohol wash liquid.* Saturate 95-percent ethyl alcohol at 29 degrees C. with dry sodium magnesium uranyl acetate, and filter prior to use.

4.3.9.3 *Procedure.* Grind a portion of the sample to a fine powder and transfer a weighed portion of approximately 10 gms. of the ground material to a beaker. Add 50 mls. of distilled water and heat to boiling. Allow the solution to cool to room temperature and decant through a filter catching the filtrate in a small beaker. Rinse the solid residue with two 5 ml. portions of distilled water and decant these through the filter, uniting the filtrate and washings. Evaporate the solution to a volume of 5 mls. and cool to room temperature. Filter the supernatant liquid into a beaker, and wash the solid residue with two 2 ml. portions of distilled water, uniting the filtrate and washings. Evaporate the solution to a volume of approximately 5 mls. and cool to 20 degrees plus or minus 1 degree C. Partially immerse the vessel containing the mixture in a bath maintained at 20 degrees plus or minus 1 degree. Add rapidly 100 mls. of magnesium uranyl acetate solution which has been held at 20 degrees plus or minus 1 degree C. Partially immerse the vessel containing the mixture in a bath maintained at 20 degrees plus or minus 1 degree C., and stir the mixture vigorously for 1 hour. Filter through a tared filtering crucible, using slight suction, transferring the precipitate to the crucible by means of magnesium uranyl solution. Wash the precipitate in the crucible with 5 ml. portions of alcohol wash liquid, allowing the crucible to be sucked dry after each washing. Dry the crucible and contents in an oven at 105 degrees to 110 degrees C. for 30 minutes, cool in a desiccator and weigh. Calculate the weight of precipitate, sodium magnesium uranyl acetate, $NaMg(UO_2)_3(C_2H_3O_2)9.6½\ H_2O$ to percentage of sodium perchlorate in the sample.

Percentage of sodium perchlorate = 8.13A divided by W

Where:

A = weight of precipitate

W = weight of sample

4.3.10 *Calcium and magnesium salts as oxides.*

4.3.10.1 *Calcium salts.* Dissolve 5 gms. of the sample in approximately 100 mls. of boiling distilled water. Add 10 mls. of concentrated hydrochloric acid to the solution, then ammonium hydroxide until slightly ammoniacal. Boil the solution and filter if necessary. Make the solution acid with a 10-percent solution of oxalic acid, and add an excess of 10 mls. of the acid. Heat the solution to boiling and add 10 mls. of a saturated solution of ammonium oxalate with vigorous stirring, dilute ammonium tate of calcium oxalate to settle for at least 1 hour, keeping the solution hot by means of a steam bath. Filter the solution and wash the precipitate free of oxalic acid with distilled water at room temperature. Retain the filtrate and washings for the determination of magnesium salts. Dissolve the precipitate in 10 mls. of approximately 50-percent sulfuric acid solution and wash the filter thoroughly with hot distilled water. Dilute the filtrate and washings to approximately 100 mls., heat to 60 degrees C., and titrate with O.1N potassium permanganate to the first discernible pink coloration. Calculate the percentage of calcium salts in the sample as calcium oxide as follows: Code No. 11001.

Percentage of calcium salts as CaO = 2.804 VN divided by W

Where:

V = ml. of potassium permanganate used

N = normality of the potassium permanganate solution

W = weight of sample

4.3.10.2 *Magnesium salts.* Dilute the filtrate and washings from the calcium oxalate filtration with distilled water to 400 mls. Add 40 mls. of 10 percent ammonium acid phosphate solution. Add dropwise, with vigorous stirring, dilute ammonium hydroxide solution until the mixture is ammoniacal. Add an excess of concentrated ammonium hydroxide equivalent to 1/10 of the volume of the solution. Allow the precipitate of magnesium pyrophosphate to settle for at least 4 hours, preferably over night, and wash the residue thoroughly with 1 percent ammonium hydroxide solution. Ignite the precipitate, gently at first and finally at approximately 1000 degrees C. to constant weight. Calculate the percentage of magnesium salts in the sample as follows: Code No. 11002.

Percentage of magnesium salts as MgO = 36.21A divided by W

where:

A = weight of residue

W = weight of sample

4.3.11 *Determination of iron.* Dissolve a weighed portion of approximately five gms. of the sample in 150 mls. of distilled water, and filter the solution. Add a slight excess of ammonium hydroxide to the filtrate and heat to boiling. Filter while hot, through a Number 40 Whatman filter paper, or equivalent. Wash the paper and contents with ten 20 ml. portions of hot distilled water. Transfer the paper and contents of a tared porcelain crucible and ignite to constant weight. Cool the crucible and contents in a desiccator and weigh. Conduct a blank determination above. Code No. 12001.

Percent iron oxides = 100 (A—B) divided by W

where:

A = weight of residue of sample

B = weight of residue of blank

W = weight of sample

4.3.12 *Purity.*

4.3.12.1 *Gravimetric method.* Mix intimately an accurately weighed portion of approximately 0.5 gms. of the sample with approximately 2 gms. of ammonium chloride in a platinum crucible. Code No. 13001. Cover the crucible, place in a cold muffle furnace and bring the temperature of the muffle furnace up to approximately 600 degrees C., gradually over a period of 1½ hours. Remove the cover, add 2 gms. of ammonium chloride, mix and continue heating in the muffle at approximately 600 degrees C. for an additional period of approximately 1 to 1½ hours until complete volatilization of the ammonium chloride is assured. Dissolve the melt in approximately 200 mls. of boiling water. Add 4 mls. of 35-percent nitric acid and 10 mls. of 10 percent silver nitrate solution. Boil the solution until the supernatant liquid is clear, filter through a tared filtering crucible, and wash the precipitate of silver chloride thoroughly with 1 percent nitric acid solution. Ignite the crucible and residue gently or dry in an oven at 135 degrees C. for at least 1 hour, cool in a desiccator and weigh. Calculate the increase in weight to percentage of potassium perchlorate in the sample on a moisture-free basis, correcting for chlorides, chlorates and sodium perchlorate.

Percent potassium perchlorate = (96.66A divided by W) minus (1.86B plus 1.13C plus 1.13D)

where:

A = weight of precipitate

B = percent of potassium chloride

C = percent potassium chlorate

D = percent of sodium perchlorate

W = weight of the dry sample

4.3.12.2 *Alternate (volumetric) method.* Transfer an accurately weighed portion of approximately 0.5 gm. of the sample to a Parr sulfur bomb cup (iron). Add 1 gm. of NaOH pellets and approximately 14 gms. of sodium peroxide-sucrose mixture (12 *gms. of 40-mesh sucrose to 250 gms. of* sodium peroxide). Assemble and tighten the bomb and place the holder within a shield. Ignite the contents of the bomb by directing the flame of an oxy-gas burner against the bottom of the cup. After the initial ignition continue the heating until the lower half of the cup attains an even cherry-red color. Remove the bomb from the shield, allow to stand for approximately 5 minutes and then cool in water. Remove the outer fastenings without disturbing the cap, wash the exterior of the cup and cap with water and discard the washings. Remove the cap, place the cup on its side in an 800 ml. beaker, wash the material adhering to the underside of the cap into the beaker with a stream of water from a wash bottle, cover with a watch glass and add water until the cup is approximately ¾ covered. When the material in the cup is dissolved, add 2 gms. of sodium peroxide, stir, boil until the peroxides are decomposed and allow to cool. Lift the cup from the solution and rinse thoroughly with a stream of 1:20 HNO_3 from a wash bottle. Add 1:1 HNO_3 in small portions allowing sufficient time between additions of the acid for the completion of the reaction in order to avoid a large excess of acid. When the solution is clear, cool and determine the total halogen by the Volhard method. The iron in solution (from the cup) acts as the indicator. *Calculate the result on a moisture-free basis to* percent potassium-perchlorate correcting for chlorides, chlorate and sodium perchlorate as follows: Code No. 13002.

Percent potassium perchlorate = (3.86 (AN—BN) divided by W) —(1.86C plus 1.13D plus 1.13E)

where:

A = ml. of $AgNO_3$ used

B = ml. of KCNS used

C = percent chloride as KCl

D = percent chlorates as $KClO_3$

E = percent $NaClO_4$

N = normality of $AgNO_3$ used

N1 = normality of KCNS used

W = weight of dry sample

4.3.13 *Particle size.*

4.3.13.1 *Granulation.* The granulation shall be determined in accordance with Standard MIL–STD–1233 method 300. Code No. 14001.

4.3.13.2 *Particle diameter.*

4.3.13.2.1 *Class 4.* The average particle diameter shall be determined in accordance with Standard MIL–STD–1233 method 100. Code No. 14002.

4.3.13.2.2 *Class 5.* The average particle diameter shall be determined in accordance

with Standard MIL–STD–1233 method 200. Code No. 14003.

5. PREPARATION FOR DELIVERY

5.1 Packing.

5.1.1 *Level C.* Unless otherwise specified, potassium perchlorate shall be packed in standard commercial steel drums or pails of the type, size, and kind commonly used for the purpose, so constructed as to insure acceptance and safe delivery by common carrier to the receiving agency. Unless otherwise specified, a single container shall contain a minimum of 250 pounds net when packed for shipment and shall be provided with a fully removable head. Containers shall be in accordance with the applicable requirements of the Interstate Commerce Commission, as stipulated in the Code of Federal Regulations 49 CFR 71–90.

5.2 Marking. In addition to any special marking required by the contract or order, all shipping containers shall be marked in accordance with Standard MIL–STD–129 and ICC regulations.

6. NOTES

6.1 Intended use.

6.1.1 *Grade A.* This potassium perchlorate is intended for use in pyrotechnics, explosives and propellants.

6.1.2 *Grade B.* This potassium perchlorate is intended for use by the Navy in rocket propellants.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number and date of this specification.

(b) Grade and Class required (see 1.2).

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

6.4 Inspection code numbers. The five-digit code numbers assigned to the inspection herein are to facilitate future data collection and analysis by the Government.

Custodian:

Army—MU

Navy — Wep

Preparing activity:

Army—MU

Project No. 6810–411–46

☆ U.S. GOVERNMENT PRINTING OFFICE: 701044–1963–(738)

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

COMMANDING OFFICER
U.S. ARMY ELECTRONICS COMMAND
ATTN: AMSEL-TD-S
FORT MONMOUTH, N.J. 07703

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 ☐ 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)*

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

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.