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DEPARTMENT OF DEFENSE STANDARD PRACTICE

ENERGETIC MATERIAL DESCRIPTION SHEETS AND PROPELLANT LOADING AUTHORIZATION SHEETS

Comments, suggestions, or questions on this document should be addressed to: Commander, U.S. Army ARDEC, ATTN: RDAR-EIQ-SA, Picatinny Arsenal, New Jersey 07806-5000 or emailed to usarmy.picatinny.ardec.list.ardec-stdzn-branch@mail.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST online database at https://assist.dla.mil.

AMSC N/A FSC 1376

FOREWORD

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.

2. This standard covers requirements for description sheets for propellants, explosives and chemicals, and also for loading authorization sheets for propellants.

3. The task of revising MIL-STD-1171A was initiated by Joint Ordnance Commanders Group (JOCG) QA subgroup. Proposed changes to the MIL-STD-1171A were reviewed by a team of members drawn from US Army, US Navy, US Air Force, US Marine Corps, and Defense Contract Management Agency (DCMA). Team was comprised of subject matter experts (SME), product quality managers (PQM), quality assurance representatives (QAR), and quality assurance specialist ammunition surveillance (QASAS). Draft of proposed changes was also circulated among several professionals representing energetic material producers and contractors for their feedback, and the suggestions received from them have also been incorporated to the possible extent in this revision.

4. Comments, suggestions, or questions on this document should be addressed to: Commander, U.S. Army ARDEC, ATTN: RDAR-EIQ-SA, Picatinny Arsenal, New Jersey 07806-5000 or emailed to usarmy.picatinny.ardec.list.ardec-stdzn-branch@mail.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST online database at https://assist.dla.mil.

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APPENDIX

BLANK SAMPLE DESCRIPTION SHEETS FOR ROPELLANTS, EXPLOSIVES AND CHEMICALS, AND PROPELLANT LOADING AUTHORIZATION SHEET

1. SCOPE

1.1 Scope. This standard establishes the content requirements for the preparation of description sheets for propellants, explosives, and chemicals and loading authorization sheets for propellants.

1.2 Application. The description sheet is a record showing the key properties of the energetic material and the results of inspections performed. In general, description sheets assist in the performance of such functions as determining the quality of propellants or explosives, comparing and evaluating the processes of various loading plants producing the same item, investigating the cause of trouble, and facilitating future surveillance and renovation. The propellant loading authorization sheet is a record of recommended zone weights for propellant charges along with end item usage restrictions, if any, and the expiration date of the authorization.

2. APPLICABLE DOCUMENTS.

This section is not applicable to this standard.

3. DEFINITIONS.

This section is not applicable to this standard.

4. GENERAL REQUIREMENTS.

4.1 Description sheet and loading authorization sheet. Description sheets and loading authorization sheets will be prepared for each lot of propellants, explosives, and chemicals when specified in the contract or specification.

4.2 Supplemental description sheet and loading authorization sheet. Supplemental description sheets and loading authorization sheets will be prepared under the following conditions:

a. When the status of a lot is changed, or when a previously suspended, rejected, or incomplete lot is submitted for ballistic tests, a supplemental description sheet will be prepared, outlining the reason for the changed status.

b. When a rejected or suspended lot is reworked, a supplemental description sheet will be prepared for such renovated lot, describing the background of the lot, the rehabilitation performed, and the results of plant inspection and testing after reworking.

c. When a propellant or an explosive lot is reassessed, a description sheet and a loading authorization sheet (if applicable) will be prepared.

5. DETAILED REQUIREMENTS.

5.1 General. Individual requirements for the propellant description sheet, rocket propellant description sheet, propellant loading authorization sheet, and description sheet for explosives and chemicals are detailed in sections 5.2 to 5.5. Blank sample sheets are included in the appendix for possible applications.

5.2 Propellant description sheet.

5.2.1 Purpose. The propellant description sheet is used to show the identity of the lot, acceptable blend numbers of nitrocellulose, data concerning the manufacturing process and some process control test results, die sizes, and the results of physical and chemical acceptance tests on each lot of propellant other than rocket propellant. It serves as a statement of inspection of the lot of propellant.

5.2.2 Preparation. The responsibility for proper preparation of the propellant description sheet rests with the producer. However, such action in no way relieves the inspector of his final responsibility for the report, to the correctness of which he must attest by signature.

a. A propellant description sheet will be prepared for each lot of propellant, other than rocket propellant, manufactured, reprocessed, reassessed, or re-blended.

b. When a lot, previously accepted, is re-blended, reassessed or reprocessed, a supplemental propellant description sheet will be prepared to indicate the added processing and the results of any added acceptance tests.

c. When a lot of propellant is produced by blending together several lots which have been previously accepted as individual lots, the quantities of propellant in pounds, type of propellant, lot numbers, and the weapon and model for which each lot is intended will be shown on the propellant description sheet.

Example:

Propellant comprising this blend is as follows:

1742 lb.	Prop., M1, IND. Lot 15136 for 155MM Gun, M1, Charge, M19
26457 lb.	Prop., M1, IND. Lot 30708 for 155MM Gun, M1, Charge, M19
13337 lb.	Prop., M1, IND. Lot 30709 for 155MM Gun, M1, Charge, M19
3608 lb.	Prop., M1, IND. Lot 30711 for 155MM Gun, M1, Charge, M19
26121 lb.	Prop., M1, IND. Lot 32670 for 155MM Gun, M1, Charge, M19
71265 lb.	Approximate weight before blending.

d. Normally, results of tests will be reported to the number of decimal places required in the test procedure, but never to less than the number of decimal places shown in the specification or other applicable requirements.

5.2.3 Required information. Instructions are provided below for how to fill out a sample propellant description sheet with required information inputs. Paragraphs have been numbered to correspond with the numbers on the sample sheet. Other formats of propellant description sheets, other than the indicated sample sheet, are acceptable as long as these sheets contain all required information and follow similar formatting as the sample sheet. A blank sample sheet is included in the appendix. The propellant description sheet shall contain at a minimum the following information:

SPACE 1. LOT NUMBER. Enter the lot number assigned by the contractor.

SPACE 2. COMPOSITION NUMBER. Show the composition number and type of grain, and for small arms propellant, the Improved Military Rifle (IMR) number if available.

Examples:

M1 MP (multi-perf), M10 Type II, M10 Flake, M 12, IMR 5010. WC 819 Ball Powder.

SPACE 3. FOR. Show weapon model and projectile for which the lot was intended.

SPACE 4. MANUFACTURED AT. Give the manufacturer's name and plant location, as contained in the contract or production order. In the case of a Government-owned works or arsenal, use the title of the works or arsenal.

SPACE 5. PACKED WEIGHT. Show the weight in pounds as packed.

SPACE 6. CONTRACT NUMBER. Give the applicable contract number.

SPACE 7. NSN. Enter the National Stock Number.

SPACE 8. SPECIFICATION NUMBER. Show the applicable specification number, drawing number, revision and date.

SPACE 9. NITROCELLULOSE. Show the acceptable blend numbers of nitrocellulose used in the lot. Indicate whether the lot is made from cotton linters or wood pulp cellulose.

SPACE 10. NITROGEN CONTENT
K.I. STARCH TEST (65.5° C), if applicable
STABILITY TEST:
GAS GENERATION TEST (132° C Bergman-Junk test)
METHYL VIOLET PAPER TEST (134.5°C) – alternative test.

List the maximum, minimum, and average results of these tests for the nitrocellulose used in the lot.

SPACE 11 (Optional). MANUFACTURE OF PROPELLANT. List the weight of solvent per pound of NC and the percentages of ether, alcohol, or acetone used as solvents. List the percent of remix to whole.

SPACE 12 (Optional). PROCESS-SOLVENT RECOVERY AND DRYING. List temperatures and time cycles for solvent recovery and drying operations. Drying operations include water-dry and air-dry.

SPACE 13. TESTS OF FINISHED PROPELLANT. Enter the constituents of the propellant, the formula (nominal or as specified) and the percentages as determined by acceptance analysis in the "Composition" block. Enter results of the acceptance test for stability, form of grain, number of perforations, absolute density, and compressibility test results in the "Stability and Physical Tests" block.

SPACE 14. CLOSED BOMB. Enter the lot number for the propellant and lot number for the test standard (or reference propellant), temperature, relative quickness, and relative force. Additional information such as test method and burning rate can be entered in the Remarks section. Additional data plots can be attached to the propellant description sheet.

SPACE 15 DIE (INCHES). List actual physical dimensions of the die used.

SPACE 16 FINISHED. List dimensions of the finished propellant grain (average) as determined by measurement.

SPACE 17 UNIFORMITY BY STD DEVIATION, %. List (for length and diameter) the standard deviation in percent of mean dimensions.

SPACE 18 DATES. Enter date packed, date sampled, date tested, and date offered. The term "date offered" is defined as the date on which the manufacturer notifies the inspector that the lot is ready to be accepted. Enter type of packaging used, including box drawing number and applicable revision date. Indicate packaging level – A, B, or C.

SPACE 19. REMARKS. Enter statement that lot either meets specification requirements or fails to meet one or more of such requirements. Add any information as to unusual conditions of manufacture which could affect usability of the lot. Enter any other relevant information about the lot.

SPACE 20. CONTRACTOR REPRESENTATIVE. The representative signing for the contractor should be an official of sufficient authority to exercise control over the contractor's inspection and production.

SPACE 21. GOVERNMENT QUALITY ASSURANCE REPRESENTATIVE. The signature of the Quality Assurance Representative, or a person designated to sign for him, is required to indicate Government acceptance insofar as physical and chemical requirements are concerned whenever government oversight is called for. Otherwise enter “N/A”.

5.2.4 Distribution. The distribution of a propellant description sheet shall be made in accordance with the instructions furnished by the procuring activity.

5.2.4.1 Electronic submission. Unless otherwise specified a copy of the propellant description sheet shall be entered into the Worldwide Ammunition Repository Program (WARP) database.

PROPELLANT DESCRIPTION SHEET				LOT NUMBER: 1			
COMPOSITION: 2		FOR 3		PACKED AMOUNT: 5			
SPECIFICATION: 8				CONTRACT NUMBER: 6			
MANUFACTURED AT: 4				NSN: 7			
NITROCELLULOSE							
Accepted Blend Numbers		Nitrogen Content 10		KI Starch (65.5°C) 10	Stability 10 Gas (132°C)	Paper (134.5°C)	
		MAX _____%		_____ MINS	____ ml NO/g	_____ MINS	
9		MIN _____%		_____ MINS	____ ml NO/g	_____ MINS	
		AVG _____%		_____ MINS	____ ml NO/g	_____ MINS	
					EXPLOSION HRS		
MANUFACTURE OF SOLVENT PROPELLANT 11							
_____ POUNDS SOLVENT PER POUND NC/DRY WEIGHT INGREDIENTS CONSISTING OF _____ POUNDS ALCOHOL AND _____ POUNDS ACETONE PER 100 POUNDS SOLVENT. 11 PERCENTAGE REMIX TO WHOLE.							
TEMPERATURE, °F		PROCESS - DRYING			TIME		
FROM	TO	12			DAYS	HOURS	
TEST OF FINISHED PROPELLANT 13							
PROPELLANT COMPOSITION				STABILITY AND PHYSICAL TESTS			
Constituent		Percent Formula	Percent Tolerance	Percent Measured	Tests	Formula	Actual
CLOSED BOMB				PROPELLANT DIMENSIONS (inches)			
Lot Number	Temp °F	Relative Quickness	Relative Force				Uniformity by Std Deviation, %
14				Parameter	Spec	Die	Finished	Spec	Actual
						15	16	17	
								Dates	
								Packed: 18	
Remarks:								Sampled:	
								Test Finished:	
								Offered:	
Type of Packing Container & Packaging Level (A, B, or C): 18									
Remarks: 19									
SIGNATURE OF CONTRACTOR'S REPRESENTATIVE 20				SIGNATURE OF GOVERNMENT QA REPRESENTATIVE 21					

FIGURE 1. Sample propellant description sheet.

5.3 Rocket propellant description sheet.

5.3.1 Purpose. The rocket propellant description sheet is a record showing the identity of the lot, acceptable blend numbers of nitrocellulose, data concerning the manufacturing process and some process control test results, and the results of physical and chemical tests of the lot. It serves as a statement of inspection of the lot of bulk propellant used in the manufacture of Jet-Assisted Take-Off (JATO) items, rocket propelling charges, grains and assemblies. This sheet applies to extruded double based or base grain for cast double based propellant, and when Government is buying sheet stock.

5.3.2 Preparation. The responsibility for proper preparation of the rocket propellant description sheet rests with the producer. However, such action in no way relieves the inspector of his final responsibility for the report, to the correctness of which he must attest by signature.

a. A rocket propellant description sheet will be prepared for each lot of rocket propellant manufactured or reworked.

b. When a lot, previously accepted, is reworked, a supplemental rocket propellant description sheet will be prepared to indicate the added processing and results of any added acceptance tests.

c. Normally, results of tests will be reported to the number of decimal places required in the test procedure, but never to less than the number of decimal places shown in the specifications or other applicable requirements. Rounding of the numerical values of the test results is permitted within the number of places shown in the specification.

5.3.3 Required information. Instructions are provided below for how to fill out a sample rocket propellant description sheet with the required information. Paragraphs have been numbered to correspond with the numbers typed on the sample sheet. Other formats of rocket propellant description sheets, other than the indicated sample sheet, are acceptable as long as these sheets contain all required information and follow similar formatting as the sample sheet. For double-base sheet stock, the use of gun propellant description sheets are also acceptable. A blank sample sheet is included in the appendix. The rocket propellant description sheet shall contain at a minimum the following information:

SPACE 1. LOT NUMBER. Enter the Army lot number assigned by the contracting officer if applicable and the year of manufacture.

SPACE 2. MANUFACTURER'S LOT NUMBER. Give the manufacturer's lot numbers, if used, and the year of manufacture.

SPACE 3. CONTRACT NUMBER. Enter the applicable contract number.

SPACE 4. NSN. Enter the National Stock Number.

SPACE 5. SPECIFICATION NUMBER. Give the applicable specification number.

SPACE 6. REVISION. Show the applicable revision date of the specification.

SPACE 7. DRAWING NUMBER. Give the drawing number of the propellant grain.

SPACE 8. REVISION. Show the applicable revision date of the propellant grain

drawing, if applicable.

SPACE 9. WEAPON. Enter the name of the rocket or JATO for which the propellant is intended.

SPACE 10. DESCRIPTION OF PROPELLANT. Show the descriptive name of the propellant, including the type, composition, formula designation, etc.

SPACE 11. MANUFACTURED AT. List the manufacturer's name and plant location as contained in the contract. In the case of a Government-owned works or arsenal, use the Government-owned works or arsenal.

SPACE 12. PACKED WEIGHT. Show the weight in pounds of the lot as packed.

SPACE 13. NITROCELLULOSE. Show the acceptable blend numbers of nitrocellulose used in the lot. Indicate whether the lot is made from cotton linters or wood pulp cellulose.

SPACE 14. NITROGEN CONTENT
K.I. STARCH TEST (65.5° C), if applicable
STABILITY TEST:
GAS GENERATION TEST (132° C Bergman-Junk test)
METHYL VIOLET PAPER TEST (134.5°C) – alternate test.

List the maximum, minimum, and average results of these tests for the nitrocellulose used in the lot.

SPACE 15. SOLVENT METHOD OF MANUFACTURE. List the weight of solvent per pound, the percent of ether, alcohol, or acetone used as solvent, and the temperatures and time (days, hours) required for drying. List the percent of remix and rework to whole.

SPACE 16. SOLVENTLESS MANUFACTURE. Indicate slurry or paste method; show time and temperature of mixing; indicate extrusion ram rate and pressure; show die and basket temperatures; and show time and temperature of annealing.

SPACE 17. REMARKS. Enter information on sources of raw material, changes in processes, unusual occurrences during production, and any other information pertinent to the preceding spaces.

SPACE 18. COMPOSITION. Enter the composition formula and composition as found by acceptance analysis.

SPACE 19. STABILITY AND PHYSICAL TESTS. Show the results of stability and physical tests, as applicable.

SPACE 20. MEASUREMENTS. List the results of dimensional measurements, as performed during acceptance testing.

SPACE 21. VISUAL INSPECTION. Show the results of visual inspection, as required.

SPACE 22. DATE PACKED. Provide the date of packing.

SPACE 23. DATE TEST FINISHED. Show the date the acceptance tests were completed.

SPACE 24. TYPE OF PACKING BOX. Enter the type of packaging used, including drawing number and applicable revision date.

SPACE 25. "This lot (does) (does not) meet chemical and physical requirement." Indicate compliance or non-compliance by choosing the inappropriate word.

SPACE 26. REMARKS. Enter here such general information as deviations from drawings and specifications, if any, and consequent waivers granted. If applicable, give data showing why lot does not meet chemical and physical requirements.

SPACE 27. TECHNICAL DEPARTMENT. The representative signing for the contractor should be an official of sufficient authority to exercise control over the contractor's inspection and production groups.

SPACE 28. INSPECTOR. The signature of the Quality Assurance Representative, or a person designated to sign for him, is required to indicate Government acceptance insofar as physical and chemical requirements are concerned whenever government oversight is called for. Otherwise enter “N/A”.

SPACE 29. U.S. CHEMIST. When all or a part of the acceptance testing has been performed by a Government chemist, this space will be signed by the Government chemist responsible for the accuracy of laboratory acceptance test results, normally the Chief Chemist. If there is no government acceptance testing required, enter “N/A”.

5.3.4 Distribution. The distribution of rocket propellant description sheets shall be made in accordance with the instructions furnished by the procuring activity.

5.3.4.1 Electronic submission. Unless otherwise specified, a copy of the rocket propellant description sheet shall be entered into the Worldwide Ammunition Repository Program (WARP) database.

ROCKET PROPELLANT DESCRIPTION SHEET

DOA LOT NUMBER *1*			MFR LOT NUMBER *2*				
CONTRACT NUMBER *3*		NSN *4*		SPEC NO. 5		REV. *6*	
DRAWING NUMBER *7*		REVISION *8*		WEAPON *9*			
DESCRIPTION OF PROPELLANT *10*							
MANUFACTURED AT *11*				PACKED WEIGHT *12*			

NITROCELLULOSE *13*

GRADE			TYPE				
ACCEPTED BLEND NUMBERS							
NITROGEN CONTENT *14*		K.I. STARCH CONTENT (65.5°C) *14*		STABILITY TEST *14*			
				Gas Gen. (132°C)		Methyl Violet Paper (135°C)	
MAXIMUM	%	MAXIMUM	MINS	ml NO/g		MAX.	MINS
MINIMUM	%	MINIMUM	MINS	ml NO/g		MIN	MINS
AVERAGE	%	AVERAGE	MINS	ml NO/g		AVG	MINS
				EXPLOSION			MINS

SOLVENT METHOD OF MANUFACTURE *15*

TOTAL WEIGHT OF SOLVENT PER POUND NON-VOLATILE CONSTITUENTS CONSISTING OF _____ POUNDS ALCOHOL AND _____ POUNDS ACETONE/ETHER PER 100 POUNDS SOLVENT.
PERCENTAGE OF REMIX_____. REWORK TO WHOLE_____ *15*

TEMPS °C		PROCESS DRYING	TIMES	
FROM	TO		DAYS	HOURS

SOLVENTLESS MANUFACTURE *16*

	TIME HOURS	TEMPS ° F
SLURRY OR PASTE METHOD		
MIXING		
EXTRUSION:		
RAM RATE_____ IN/SEC RAM PRESSURE P.S.I_____		
DIE TEMPERATURE		
BASKET TEMPERATURE		
TYPE ANNEALING		

REMARKS

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FIGURE 2. Sample rocket propellant description sheet.

TEST OF FINISHED PROPELLANT

COMPOSITION PERCENT *18*			
CONSTITUENT	FORMULA	MFR	INSPR

STABILITY AND PHYSICAL TEST *19*		
°C HEAT TEST SP	MFR	INSPR
FUMES		
EXPLOSION		
GRAIN FORM		
DENSITY LB/CU. IN		
SALMON PINK		
WEIGHT	FOUND	SPECIFIED
STICK CHARGE (GRAM)		
MEAN		
STANDARD DEVIATION		
MEAN + STD DEV		
MEAN - STD DEV		
NUMBER CHARGES WEIGHED		

MEASUREMENTS *20*		
OUTSIDE DIAMETER	FOUND	SPECIFIED
MEAN		
STANDARD DEVIATION		
MEAN + STD DEV		
NUMBER STICKS MEASURED		
LENGTH		
MEAN		
NUMBER STICKS MEASURED		
NUMBER STICKS EXCEEDING INCH		
GRAIN DIMENSIONS		
LENGTH		
DIAMETER		
DIA OF PERFORATIONS		
AVERAGE WEB		
SHEET DIMENSIONS		
LENGTH		
WIDTH		
THICKNESS		

RADIOGRAPHICAL OR ULTRASONIC RESULTS FOR FISSURES AND FOREIGN MATERIAL		
	NO INSP	NO DEF
100% VISUAL INSPECTION *21*		
STRAIGHTNESS		
FISSURES & PINHOLES EXCEEDING _____ INCH IN DIAMETER		
BREAKS IN SURFACE		
REMARKS		

DATE PACKED *22*	DATE TEST FINISHED *23*
TYPE OF PACKING BOX *24*	

THIS LOT DOES/DOES NOT MEET CHEMICAL AND PHYSICAL REQIREMENTS *25*
(EXCEPTIONS IF ANY NOTED UNDER REMARKS)

REMARKS

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TECHNICAL DEPARTMENT	ARMY INSPECTOR	US CHEMIST
27	*28*	*29*

FIGURE 2. Sample rocket propellant description sheet - Continued.

5.4 Propellant loading authorization sheet.

5.4.1 Purpose. The propellant loading authorization sheet is a record showing the identity of the lot and its suitability for loading into the ammunition item stated in the sheet. It provides recommendation for charge weights to be used and validity period for the authorization.

5.4.2 Preparation. Persons such as product quality specialists having responsibility for quality assurance of the propellant shall establish the expiry date and issue the loading authorization. The person issuing the propellant loading authorization sheet shall be responsible for entering propellant loading authorization sheets into the WARP database.

5.4.2.1 A propellant loading authorization sheet will be prepared for every new lot of propellant, as well as every time a propellant lot is reprocessed; reassessed; or re-blended.

5.4.3 Required information. Instructions are provided below for how to fill out a propellant loading authorization sheet with the required information. Paragraphs have been numbered to correspond with the numbers typed on the sample sheet. Other formats of propellant loading authorization sheets, other than the indicated sample sheet, are acceptable as long as these sheets contain all required information and follow similar formatting as the sample sheet. A blank sample sheet is included in the appendix. The propellant loading authorization sheet shall contain at a minimum the following information:

SPACE 1. ISSUE DATE. Enter the date of issue of the propellant loading authorization.

SPACE 2. PROPELLANT DESCRIPTION. Enter the nomenclature or brief description of the propellant for which the loading authorization applies.

SPACE 3. LOT NUMBER. Enter the lot number or numbers of the propellant.

SPACE 4. DATE TESTED. Enter the date testing was completed.

SPACE 5. NAME OF THE TEST FACILITY. Enter the name of the facility where test was conducted, if applicable.

SPACE 6. AUTHORIZED ITEMS. Enter the type of ammunition items or rockets or JATO items in to which the propellant may be loaded.

SPACE 7. RESTRICTIONS. Enter restrictions for use, if any.

SPACE 8. RECOMMENDED CHARGE WEIGHTS. Enter the charge weights recommended for each zone, as applicable.

SPACE 9. EXPIRY DATE. Enter the expiration date of the loading authorization.

SPACE 10. REMARKS. Enter here any other information pertinent to the preceding spaces.

SPACE 11. POC. Enter the name, office symbol, and telephone number of the person issuing the loading authorization.

5.4.4 Distribution. The distribution of the propellant loading authorization sheet shall be made in accordance with the instructions furnished by the procuring activity.

5.4.4.1 Electronic submission. Unless otherwise specified, a copy of the propellant loading authorization sheet shall be entered into the WARP database.

PROPELLANT LOADING AUTHORIZATION SHEET		
ISSUE DATE *1*		
PROPELLANT DESCRIPTION *2*		
LOT NUMBER/S *3*	DATE TESTED *4*	
NAME OF THE TEST FACILITY *5*		
AUTHORIZED ITEMS *6*		
RESTRICTIONS *7*		
RECOMMENDED CHARGE WEIGHTS *8*		
EXPIRY DATE *9*		
REMARKS *10*		
POC *11*		
_____ NAME	_____ OFFICE SYMBOL	_____ TELEPHONE

FIGURE 3. Sample propellant loading authorization sheet

5.5 Description sheet for explosives, chemicals etc.

5.5.1. Purpose. The description sheet is intended to serve as a record of results obtained during inspection to establish the acceptability of chemical materials such as bulk explosives, pyrotechnics or chemical raw materials.

5.5.2. Preparation. The responsibility for proper preparation of the description sheet for explosives, chemicals, etc. rests with the producer. However such action in no way relieves the inspector of his final responsibility for the report, to the correctness of which he must attest by signature.

a. A description sheet will be prepared for each lot of explosive and chemicals manufactured or retested.

b. A description sheet may cover more than one batch; however, results of tests for only those batches having serial numbers in sequence may be recorded on any one sheet. Results of inspection and tests for accepted batches and rejected batches will not be placed on the same sheet.

c. Description sheets, when used to report results of inspection and rejection will have the word "Rejected" or “Rejection". Such sheets will show clearly the cause for rejection.

d. Normally, results of tests will be reported to the number of decimal places required in test procedure, but never to less than the number of decimal places shown in the specifications or other applicable requirements. The specification limits are to be considered absolute when judging the acceptability of the test item. Rounding of the numerical value of the test results will not be permitted within the number of places shown in the specification. In rounding off the numerical values of test results, the last significant figure (the terminal decimal figure of the expressed requirement) will be increased by one when the discarded figure is five or greater.

e. If the status of any batch or lot is changed subsequent to acceptance or rejection, a supplemental report will be made, utilizing a description sheet for explosives, chemicals, etc., with a clear statement of the reason for the change in status.

5.5.3 Required information. Instructions are provided below for how to fill out a sample description sheet for explosives, chemicals, etc. with the required information. Paragraphs have been numbered to correspond with the numbers typed on the sample sheet. Other formats of description sheets for explosives, chemicals, etc., other than the indicated sample sheet, may be used as long as these sheets contain all required information and follow similar formatting as the sample sheet. A blank sample sheet is included in the appendix. The description sheet for explosives, chemicals, etc. shall contain at a minimum the following information:

SPACE 1. INSTALLATION. Enter full name of installation (e.g., Holston Army Ammunition Plant) or activity conducting the inspection.

SPACE 2. MANUFACTURER. Show full name of the manufacturer.

SPACE 3. CONTRACT. List contract number or purchase order number.

SPACE 4. DATE. Enter the date sheet was completed.

SPACE 5. MATERIAL. Show name of material as set forth in the specification, along

with type, class, grade, or other class designation.

SPACE 6. LOT NUMBER. Enter the lot number assigned by the contractor.

SPACE 7. FROM NUMBER. Enter the first batch number if a series of batches is being reported. Enter "See COA" (certificate of analysis) for non-sequential batches.

SPACE 8. THRU NUMBER. Show the number of the last batch covered by the report. Leave space blank if only one batch is reported or if batches are not sequential.

SPACE 9. TOTAL NUMBER OF BATCHES. Show the number of batches covered by the report.

SPACE 10. TOTAL NET AMOUNT ACCEPTED. Show the total quantity, in pounds (or units stipulated in the contract), accepted by the report.

SPACE 11. PLACE MANUFACTURED. Show the location or name of manufacturing plant or point where material is actually produced.

SPACE 12. SPECIFICATION AND AMENDMENT: DRAWING NUMBER. Record applicable specification number and amendment, and any drawing numbers with revisions.

SPACE 13. TEST RESULTS. This space is provided for reporting the results of tests. Batch numbers, batch quantities, and the results of tests for each requirement will be tabulated for all batches reported on the sheet. It is usually advantageous to list batch number, batch size, and each specification requirement at column headings, and tabulate data for each batch below the heading. In this manner, the results of as many as 20 to 25 batches may be reported, and the material accepted, on one sheet. Immediately below the column heading for the requirement (e.g., acidity, water insoluble matter, etc.), the limit or tolerance for the requirement will be shown. Enter “See COA” if this space is not utilized and certificate of analysis is attached instead.

SPACE 14. EXPIRATION DATE. Enter the expiration date for the lot, if applicable.

SPACE 15. REMARKS. Cite reference to any waivers, Engineering Orders, or similar authority, to accept material at variance with specifications. Include comments pertinent to the lot or its inspection and acceptance.

SPACE 16. SAMPLING CONDUCTED BY. Indicate whether the sampling was performed by a Government inspector or the contractor. Include name of the individual, if known, and the organization.

SPACE 17. TESTING CONDUCTED BY. The person responsible for doing the testing will sign in this space over his typed name and title. The title must indicate whether testing was performed by a Government inspector, by a commercial testing laboratory, by another Government testing laboratory, or by some interested party, such as the contractor.

SPACE 18. If any part of the inspection is conducted by the manufacturer, a certificate of the accuracy or validity of results obtained is required. The certificate should be explicit with respect to any limits of the certificate coverage. The certificate should be signed by the plant superintendent or an official designated by him.

SPACE 19. DATE. Enter the date of acceptance or rejection.

SPACE 20. TITLE. Enter the official title of the person making the acceptance or rejection.

SPACE 21. SIGNATURE. The signature of the person signing the report and thus accepting the material will appear over his typed name on the original copy of the form.

5.5.4 Distribution. The distribution of the description sheet shall be made in accordance with the instructions furnished by the procuring activity.

5.5.4.1 Electronic submission. Unless otherwise specified a copy of the description sheet shall be entered into the Worldwide Ammunition Repository Program (WARP) database.

DESCRIPTION SHEET FOR EXPLOSIVES, CHEMICALS, ETC.	DATE 4	
	MATERIAL 5	
	LOT NUMBER 6	
INSTALLATION 1	FROM NUMBER 7	THROUGH NUMBER 8
	TOTAL NUMBER OF BATCHES 9	TOTAL NET AMOUNT ACCEPTED 10
MANUFACTURER 2	PLACE MANUFACTURED 11	
CONTRACT 3	SPECIFICATION AND AMENDMENT - DRAWING NUMBER 12	
TEST RESULTS 13		
EXPIRATION DATE 14		
REMARKS 15		
SAMPLING CONDUCTED BY 16	CERTIFIED TRUE AND CORRECT	
TESTING CONDUCTED BY 17	18	
THE ABOVE MATERIAL COMPLIES WITH SPECIFICATION REQUIREMENTS	_____ DATE	_____ SIGNATURE
THE ABOVE DESCRIBED BATCHES ARE HEREBY ACCEPTED		
19 _____ DATE	20 _____ TITLE	21 _____ SIGNATURE

FIGURE 4. Sample description sheet for explosives, chemicals, etc.

6. NOTES

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

6.1 Intended use. Description sheets for propellants and explosives are intended to be used for documentation of propellant and explosive test results and the Government's acceptance of these test data conforming to specified chemical and physical requirements. The propellant loading authorization sheet is intended to document approval of zone weights for propellant charges, end item usage restrictions, if any, and the expiration date of the authorization.

6.2 Consideration of data requirements. The following data requirements should be considered when this standard is applied on a contract. The applicable Data Item Descriptions (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DIDs are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DO Form 1423. Entry of data into the required fields in WARP along with attachment of test results/certificate of analysis (COA) is deemed as meeting the data requirements of this standard.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4. & 5.	(TBD)	Propellant Description Sheet	(TBD)

The above DIDs were current as of the date of this standard. The ASSIST database should be researched at http://assist.dla.mil/quicksearch/ to ensure that only current and approved DIDs are cited on the DD Form 1423.

6.3 Subject term (keyword) listing.

Propellant description sheet
Rocket propellant description sheet
Description sheet for explosives, chemicals, etc.
Rocket propellant
Explosive
Chemicals

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

APPENDIX A

BLANK SAMPLE DESCRIPTION SHEETS FOR ROPELLANTS, EXPLOSIVES AND CHEMICALS, AND PROPELLANT LOADING AUTHORIZATION SHEET

A.1 SCOPE.

A.1.1 Scope. This appendix contains one blank sample sheet each for the three description sheets for propellants and explosives, and one loading authorization sheet for propellants. This appendix is not a mandatory part of the standard. The information contained herein is intended for guidance only.

A.2 APPLICABLE DOCUMENTS. This section is not applicable to this appendix.

A.3 SAMPLE SHEETS. One blank sample sheet for each of the three description sheets for propellants, explosives and chemicals, and one loading authorization sheet for propellants are included below:

PROPELLANT DESCRIPTION SHEET		LOT NUMBER:
COMPOSITION:	FOR	PACKED AMOUNT:
SPECIFICATION:		CONTRACT NUMBER:
MANUFACTURED AT:		NSN:

NITROCELLULOSE

Accepted Blend Numbers	Nitrogen Content	KI Starch (65.5°C)	Stability	
			Gas (132°C)	Paper (134.5°C)
	MAX _____%	_____ MINS	____ ml NO/g	_____ MINS
	MIN _____%	_____ MINS	____ ml NO/g	_____ MINS
	AVG _____%	_____ MINS	____ ml NO/g	_____ MINS
			EXPLOSION HRS	

MANUFACTURE OF SOLVENT PROPELLANT

_____ POUNDS SOLVENT PER POUND NC/DRY WEIGHT INGREDIENTS CONSISTING OF _____ POUNDS ALCOHOL AND _____ POUNDS ACETONE PER 100 POUNDS SOLVENT. _____PERCENTAGE REMIX TO WHOLE.

TEMPERATURE, °F		PROCESS - DRYING	TIME	
FROM	TO		DAYS	HOURS

TEST OF FINISHED PROPELLANT

PROPELLANT COMPOSITION

Constituent	Percent Formula	Percent Tolerance	Percent Measured

STABILITY AND PHYSICAL TESTS

Tests	Formula	Actual

CLOSED BOMB

Lot Number	Temp °F	Relative Quickness	Relative Force

PROPELLANT DIMENSIONS (inches)

				Uniformity by Std Deviation, %	
Parameter	Spec	Die	Finished	Spec	Actual
				Dates	
				Packed:	
				Sampled:	
				Test Finished:	
				Offered:	

Remarks:

Type of Packing Container & Packaging Level (A, B, or C):

Remarks:

SIGNATURE OF CONTRACTOR'S REPRESENTATIVE	SIGNATURE OF GOVERNMENT QA REPRESENTATIVE

FIGURE A-1

ROCKET PROPELLANT DESCRIPTION SHEET

DOA LOT NUMBER	MFR LOT NUMBER		
CONTRACT NUMBER	NSN	SPEC NO.	REV.
DRAWING NUMBER	REVISION	WEAPON	
DESCRIPTION OF PROPELLANT			
MANUFACTURED AT		PACKED WEIGHT	

NITROCELLULOSE

GRADE	TYPE
ACCEPTED BLEND NUMBERS	

NITROGEN CONTENT		K.I. STARCH CONTENT (65.5°C)		STABILITY TEST		
				Gas Gen. (132°C)	Methyl Violet Paper (135°C)	
MAXIMUM	%	MAXIMUM	MINS	ml NO/g	MAX.	MINS
MINIMUM	%	MINIMUM	MINS	ml NO/g	MIN	MINS
AVERAGE	%	AVERAGE	MINS	ml NO/g	AVG	MINS
					EXPLOSION	MINS

SOLVENT METHOD OF MANUFACTURE

TOTAL WEIGHT OF SOLVENT PER POUND NON-VOLATILE CONSTITUENTS CONSISTING OF _____ POUNDS ALCOHOL AND _____ POUNDS ACETONE/ETHER PER 100 POUNDS SOLVENT.
PERCENTAGE OF REMIX_____. REWORK TO WHOLE_____

TEMPS °C		PROCESS DRYING	TIMES	
FROM	TO		DAYS	HOURS

SOLVENTLESS MANUFACTURE

	TIME	TEMPS
	HOURS	° F
SLURRY OR PASTE METHOD		
MIXING		
EXTRUSION:		
RAM RATE_____ IN/SEC RAM PRESSURE P.S.I_____		
DIE TEMPERATURE		
BASKET TEMPERATURE		
TYPE ANNEALING		

REMARKS

FIGURE A-2

TEST OF FINISHED PROPELLANT

COMPOSITION PERCENT			
CONSTITUENT	FORMULA	MFR	INSPR

MEASUREMENTS		
OUTSIDE DIAMETER	FOUND	SPECIFIED
MEAN		
STANDARD DEVIATION		
MEAN + STD DEV		
NUMBER STICKS MEASURED		
LENGTH		
MEAN		
NUMBER STICKS MEASURED		
NUMBER STICKS EXCEEDING INCH		
GRAIN DIMENSIONS		
LENGTH		
DIAMETER		
DIA OF PERFORATIONS		
AVERAGE WEB		
SHEET DIMENSIONS		
LENGTH		
WIDTH		
THICKNESS		

STABILITY AND PHYSICAL TEST		
°C HEAT TEST SP	MFR	INSPR
FUMES		
EXPLOSION		
GRAIN FORM		
DENSITY LB/CU. IN		
SALMON PINK		
WEIGHT	FOUND	SPECIFIED
STICK CHARGE (GRAM)		
MEAN		
STANDARD DEVIATION		
MEAN + STD DEV		
MEAN - STD DEV		
NUMBER CHARGES WEIGHED		

RADIOGRAPHICAL OR ULTRASONIC RESULTS FOR FISSURES AND FOREIGN MATERIAL		
	NO INSP	NO DEF
100% VISUAL INSPECTION		
STRAIGHTNESS		
FISSURES & PINHOLES EXCEEDING _____ INCH IN DIAMETER		
BREAKS IN SURFACE		
REMARKS		

DATE PACKED	DATE TEST FINISHED
TYPE OF PACKING BOX	

THIS LOT DOES/DOES NOT MEET CHEMICAL AND PHYSICAL REQIREMENTS
(EXCEPTIONS IF ANY NOTED UNDER REMARKS)

REMARKS

TECHNICAL DEPARTMENT	ARMY INSPECTOR	US CHEMIST

FIGURE A-2-continued.

PROPELLANT LOADING AUTHORIZATION SHEET	
ISSUE DATE	
PROPELLANT DESCRIPTION	
LOT NUMBER/S	DATE TESTED
NAME OF THE TEST FACILITY	
AUTHORIZED ITEMS	
RESTRICTIONS	
RECOMMENDED CHARGE WEIGHTS	
EXPIRY DATE	
REMARKS	
POC _____ NAME _____ OFFICE SYMBOL _____ TELEPHONE	

FIGURE A-3

DESCRIPTION SHEET FOR EXPLOSIVES, CHEMICALS, ETC.	DATE	
	MATERIAL	
	LOT NUMBER	
INSTALLATION	FROM NUMBER	THROUGH NUMBER
	TOTAL NUMBER OF BATCHES	TOTAL NET AMOUNT ACCEPTED
MANUFACTURER	PLACE MANUFACTURED	
CONTRACT	SPECIFICATION AND AMENDMENT - DRAWING NUMBER	
TEST RESULTS		
EXPIRATION DATE		
REMARKS		

SAMPLING CONDUCTED BY	CERTIFIED TRUE AND CORRECT
TESTING CONDUCTED BY	
THE ABOVE MATERIAL COMPLIES WITH SPECIFICATION REQUIREMENTS	_____ DATE _____ SIGNATURE

THE ABOVE DESCRIBED BATCHES ARE HEREBY ACCEPTED

_____ DATE _____ TITLE _____ SIGNATURE

FIGURE A-4

INDEX

CONCLUDING MATERIAL

Custodian:
Army-AR
Navy-OS
Air Force -11

Preparing Activity
Army – AR
(Project 1376-2016-005)

Review Activities
Army –AV, MR, TE
Navy – AS, MC, SH
Air Force – 70, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.