

INCH-POUND

MIL-R-398C  
 INT AMENDMENT 6 (AR)  
 9 September 1992  
 SUPERSEDING  
 INT AMENDMENT 5  
 1 MAY 1978

## MILITARY SPECIFICATION

RDX

This Interim Amendment is approved for use within the U.S. Army Armament, Munitions, and Chemical Command, with Military Specification MIL-R-398C dated 22 August 1962.

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Paragraph 1.1: After "see 6.1", add "and 6.10". Delete "Type A" and "Type B" and substitute "Type I" and "Type II" respectively.

Section 2: Delete in its entirety and substitute:

"2. APPLICABLE DOCUMENT

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein.

## SPECIFICATIONS

## FEDERAL

CCC-C-461 - Cloth, Twill, Uniform Cotton  
 PPP-B-26 - Bag, Plastic, Polyethylene  
 RF-s-366 - Sieves, Standard for Testing Purposes

## STANDARDS

## MILITARY

MIL-STD-105 - Sampling Procedure and Tables for Inspection by Attributes (ABC-STD-105)  
 MIL-STD-109 - Quality Assurance Terms and Definitions  
 MIL-STD-129 - Marking for Shipment and Storage  
 MIL-STD-1168 - Lot Numbering of Ammunition  
 MIL-STD-1235 - Single and Multilevel Continuous Sampling Procedures and Tables for Inspection by Attributes

AMSC N/A

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FSC 1376

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(Copies of Specifications, standards, drawings and publications required by the contractors 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. Unless otherwise indicated, the issue in effect on date of invitations for bids shall apply to the extent specified herein.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM Designation D882 - Tensile Properties of Thin Plastic Sheeting  
ASTM Designation E300 - Recommended Practice for Sampling Industrial Chemicals

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

CODE OF FEDERAL REGULATIONS

49 CFR 100-199 - Department of Transportation Rules and Regulations for the Transportation of Explosives and Other Dangerous Articles

(The Code of Federal Regulations is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Orders for the above publications should cite: "49 CFR 100-199 (latest revision).")

Paragraph 3.1: Delete "Table I" in its entirety and substitute:"

TABLE I

Test	Type I	Type II	Test Para.
Melting point, Min.	200.0	190.0	4.3.1

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Test	Type I	Type II	Test Para.
Total acetone insoluble material % max.	0.05	0.05	4.3.2
Inorganic insoluble, % max	0.03	0.03	4.3.3
Insoluble particles, retained on US Standard No. 60 sieve Number of particles, max.	5	5	4.3.4
Acidity, % max.	0.05	0.02	4.3.5"

Paragraph 4.1: Delete in its entirety and substitute:

"4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements. Reference shall be made to MIL-STD-109 to define terms used herein.

4.1.1 Submission of product. At the time each completed lot of items deliverable under the contract 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 being submitted:

a. A statement that the lot complies with all of the quality assurance provisions specified in this specification.

b. Specification number and date, together with identification and date of changes thereto.

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c. Certificates of analysis on all materials used directly by the contractor when such material is controlled by Government specifications shall be made available upon request by the Contracting Officer.

d. Quantity of RDX in pounds in the lot.

e. 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 principle. Substantiation of the agent's authority will not be required with the subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization."

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Paragraph 4.2.1: Delete in its entirety and substitute:

4.2.1 Lot formation. A lot shall consist of one or more batches of RDX produced by one manufacturer, in accordance with the same specification, or same specification revision, under one continuous set of operating conditions. Each batch shall consist of that quantity of RDX that has been subjected to the same unit chemical or physical process. The lot shall be submitted for inspection in accordance with MIL-STD-105 (or MIL-STD-1235) when applicable). The criteria and procedures for the assignment of lot numbers shall be in accordance with MIL-STD-1168."

Paragraph 4.2.2: Delete in its entirety and substitute:

4.2.2 Examination. Sampling plans and procedures for the following classifications of defects shall be in accordance with MIL-STD-105 (ABC-STD-105), except that inspection for critical defects shall be 100 percent. Contractor's sampling plans, if used, shall be approved by the Government and shall provide, as a minimum, the protection afforded the Government by the sampling plans in MIL-STD-105. Continuous sampling plans in accordance with MIL-STD-1235 may be used if approved by the procuring activity."

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Paragraph "4.4.2.1, 4.4.2.2, 4.4.2.3, 4.4.2.4 and 4.4.2.5":  
Delete in their entirety and substitute Paragraphs "4.2.2.1, 4.2.2.2, 4.2.2.3, 4.2.2.4, 4.2.2.5, and 4.2.2.6" as follows:

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 1	DRAWING NUMBER
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH
			INSPECTION METHOD REFERENCE
4.2.2.1	Bag, Cloth		NEAT HIGH-R ASSEMBLY
<u>Critical</u>	None defined		
<u>Major</u> 101 102 103	Foreign matter Bag pierced or torn Not tied or improperly tied	0.40% 0.40% 0.40%	Visual Visual Visual
<u>Minor</u>	None defined		
NOTES:			

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

AMSQC Form 1570b, 1 Jul 89

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	POLYETHYLENE BAG	SHEET 1 OF 1		DRAWING NUMBER
			COMPLIANCE CRITERIA	REQUIREMENT PARAGRAPH	
CLASSIFICATION	EXAMINATION OR TEST		INSPECTION METHOD REFERENCE		
<u>Critical</u>  <u>Major</u> 101  102  <u>Minor</u>	None defined  Seam splits when manual pressure is applied along entire length of seam Bag damaged  None defined		0.65% 0.65%	5.1 5.1	Visual/Manual Visual
NOTES:					

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## CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	DRAWING NUMBER	
					SHEET 1 OF 1	NEXT HIGHER ASSEMBLY
CLASSIFICATION					INSPECTION METHOD REFERENCE	
4.2.2.5	Drums with Cover and Locking Ring Before Closing					
<u>Critical</u>	None defined					
<u>Major</u>						
101	Top chime bent, deformed or cut	0.65 $\pm$	5.2	Visual		
102	Bottom chimes collapsed (annular groove closed or partially closed) or deformed	0.65 $\pm$	5.2	Visual		
103	Body bulged, cut or dented	0.65 $\pm$	5.2	Visual		
104	Gasket in cover missing or damaged	0.65 $\pm$	5.2	Visual		
105	Cover bent, creased or deformed in gasket area or around edge	0.65 $\pm$	5.2	Visual		
106	Locking ring damaged so as to prevent closing	0.65 $\pm$	5.2	Visual/Manual		
<u>Minor</u>						
201	Outer body surface seriously scuffed or metal scratched through galvanized surface	0.65 $\pm$	5.2	Visual		
202	Nicks or dents in chimes or cover not affecting function	0.65 $\pm$	5.2	Visual		
203	Locking ring bent or deformed	0.65 $\pm$	5.2	Visual		
NOTES:						

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	ITEM	SHEET 1 OF 1	DRAWING NUMBER
CLASSIFICATION	EXAMINATION OR TEST	COMFORMANCE CRITERIA	REQUIREMENT PARAGRAPH
			INSPECTION METHOD REFERENCE
4.2.2.4	Tied Polyethylene		NEXT HIGHER ASSEMBLY
<u>Critical</u>	None defined		
<u>Major</u>	Bag improperly closed	0.65%	Visual
101	Bag damaged	0.65%	Visual
102	Insufficient solution	0.65%	*See notes
103	Insufficient alcohol in solution	0.65%	*See notes
104	Net weight	0.65%	*See notes
105			
<u>Minor</u>	None defined		

NOTES: \*Inspection will be accomplished by witnessing procedures used by contractor to comply with requirements.



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PARAGRAPH	TITLE	SHEET 1 OF 1		CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	DRAWING NUMBER	
		EXAMINATION OR TEST				INSPECTION METHOD REFERENCE	NEXT HIGHER ASSEMBLY
4.2.2.5	Drums with Cover and Locking Ring Before Closing						
<u>Critical</u>	None defined						
<u>Major</u> 101 102	Top chime bent, deformed or cut Bottom chimes collapsed (annular groove closed or partially closed) or deformed	0.65 %	5.2	Visual			
103	Body bulged, cut or dented	0.65 %	5.2	Visual			
104	Gasket in cover missing or damaged	0.65 %	5.2	Visual			
105	Cover bent, creased or deformed in gasket area or around edge	0.65 %	5.2	Visual			
106	Locking ring damaged so as to prevent closing	0.65 %	5.2	Visual/Manual			
<u>Minor</u> 201	Outer body surface seriously scuffed or metal scratched through galvanized surface	0.65 %	5.2	Visual			
202	Nicks or dents in chimes or cover not affecting function	0.65 %	5.2	Visual			
203	Locking ring bent or deformed	0.65 %	5.2	Visual			

NOTES:

AMSMC Form 1570b, 1 Jul 89 Replaces 1570, 1 Feb 85, which may not be used.

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CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 1	COMPLIANCE CRITERIA	EXAMINATION OR TEST	REQUIREMENT PARAGRAPH	DRAWING NUMBER	
						INSPECTION METHOD REFERENCE	NEXT HIGHER ASSEMBLY
4.2.2.6	Sealed Drum						
<u>CLASSIFICATION</u>							
<u>Critical</u>	None defined						
Major 101	Alcohol solutions leaking from drum	0.65%	5.2	Visual/Manual			
102	Cover or locking band improperly sealed	0.65%	5.2	Visual			
103	Seal missing or improperly applied	0.65%	5.2	Visual			
Minor 201	Marking missing, incorrect or illegible	0.65%	5.3	Visual			
<u>NOTES:</u>							

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Paragraph 4.2.3: Delete in its entirety and substitute:

"4.2.3 Testing

4.2.3.1 Sampling. The tests depicted in Paragraphs 4.3.1 through 4.3.6 shall be performed on an approximately twelve (12) ounce sample representative of the batch and taken in accordance with ASTM Procedure E300-70 for solids. The selection of batches for inspection sampling and testing shall be in accordance with MIL-STD-1235, CSP-1 Plan, Sample Frequency Code Letter B, AQL 6.5%. If any sample fails to meet any test requirement, the batch represented by the sample shall be rejected. All batches produced between the time that the last batch was tested and accepted and the batch which failed shall be tested in accordance with the applicable methods given in paragraph 4.3. If any of these batches fail to meet any of the test requirements that batch shall also be rejected. In addition, after any failure of a batch the contractor will return to 100% inspection until "i" successive batches are accepted as required by MIL-STD-1235. The classification and code number shall be as given in Table III.

TABLE III

Melting point determination (see 3.1)	Major Defect Code No. 04001
Alternate m.p. determination (see 3.1)	Major Defect Code No. 05001
Acetone insoluble material (see 3.1)	Major Defect Code No. 06001
Inorganic insoluble material (see 3.1)	Major Defect Code No. 07001
Insoluble particles (see 3.1)	Major Defect Code No. 08001
Acidity determination (see 3.1)	Major Defect Code No. 09001
Granulation determination (see 3.1)	Major Defect Code No. 10001"

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Section 5: Delete in its entirety and substitute:

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"5. Packaging.

5.1 Preservation and packaging.

5.1.1 Level A and Level B. Unless otherwise specified by the procuring activity, RDX will be preserved and packaged as follows: Not more than 50 pounds, dry weight, of the wet RDX shall be packed in a cloth bag described in 5.1.1.2. Filled cloth bags shall be placed in a rubber bag, rubberized cloth bag or two polyethylene bags, described in 5.1.1.1, placed one inside the other. Sufficient water, if necessary, and isopropyl alcohol shall be added to the outer bag so that a solution of 40 percent isopropyl alcohol and 60 percent water makes up at least 10 percent by weight of the contents of the outer bag. Inner and outer bags shall be securely tied with the polyethylene bags individually tied, using non-metallic tape or cord. The tops of the outer bags shall be gathered and formed into a gooseneck when being tied.

5.1.1.1 The polyethylene bags shall comply with Type II, Style 1 of Specification PPP-B-26 except that closure will not be heat sealed. The bag size shall be approximately 31 inches flat width by 55 inches in length. The bag seams shall meet the seam strength test with an AQL of 0.65 percent at 50 percent of the breaking strength of the polyethylene film. The seam strength test shall be performed in accordance with Method A of ASTM D882 using one-inch wide specimens. Seams shall also be examined by separating the bag faces and applying pressure manually along the entire length of the seam. Seams which can be opened at any point in this manner are not acceptable.

5.1.1.2 The cloth bags shall be made from white cotton twill, free of size and brighteners, complying with the general requirements of Specification CCC-C-461 and the following detailed requirements:

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Yarn	Carded
Yarn Ply	Warp 12/1 Fill 18/1
Weight	7.2 $\pm$ .5 oz/sq yd (Greige) 6.0 $\pm$ .7oz/sq yd (after bleaching)
Yarns per inch (minimum)	Warp 78 Fill 47
Breaking Strength (minimum)	Warp 170 Fill 70
Weave	3 X 1 twill

A suggested bag size is 19 inches wide by 29 inches in depth. The tie tape may be attached to the bag by sewing. Alternatively, double filled gray cotton duck weighing not less than 1/2 oz. per square yard may be used for the bag.

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- \* Para 5.1.1.2 Delete "Weave 3 X 1 twill" and substitute "Weave 2 X 1 twill".

5.2 Packing.

5.2.1 Level A. A maximum of 300 pounds dry weight of crystalline RDX packaged in accordance with 5.1 shall be packed in an outer bag which has been placed in a drum complying with Department of Transportation Specification 5 or 5B of the Code of Federal Regulations 49 CFR 100-199.

5.2.2 Level B. 225 pounds maximum, dry weight, of crystalline RDX packaged in accordance with 5.1 shall be packed in a fiber drum complying with DOT specification 21C (approximate gross weight of 300 pounds) and the following requirements. The drum shall be approximately 18 1/2 inches in diameter by 26 inches in height, inside dimensions. The drum shall have a 24-gauge steel cover with a rubber gasket, level locking band with provisions for sealing and wide bottom chime (2-inch minimum formed height). All metal parts shall be hot dip galvanized and chimes shall be welded. Bottom chimes shall be 0.028 inch steel and top chime shall be 0.025 inch steel. The body shall be wound with hot melt or thermoplastic adhesive and the seam covered with a heat sealed tape. The inner surface of the bottom and body shall have a laminated liner of 0.002 inch thick polyethylene. The bottom

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crimp shall be caulked. The finished drum including closure shall be leak tight construction suitable for liquid contents.

5.3 Marking. Containers shall be marked as required by Code of Federal Regulations 49 CFR 100-199. In addition, shipments shall be marked in accordance with MIL-STD-129. Each container shall be clearly labelled with the lot number and net weight of its contents. When a container holds RDX for more than one lot, all lot numbers shall be shown on the label and each of the small bags inside the container shall be clearly and permanently labelled with the lot number of its contents."

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Section 6: Table II: Change "A Percent, B Percent...H Percent to "1 Percent, 2 Percent...8 Percent".

Paragraph 6.1: Change "Class A, Class B...Class H" to "Class 1 (see 6.10), Class 2...Class 8".

Paragraph 6.3: Add: "(c) Acceptance and description sheets shall be prepared for each lot in accordance with MIL-STD-1171."

Paragraph 6.6: Change "Type A" and "Type B" to "Type I" and "Type II" respectively.

Paragraph 6.8: After "STANAG No. 4011", Add "and ABC-Army-STD-115".

Add new paragraph:

"6.10 In accordance with the designation of classifications, paragraph 5-222 of Defense Standardization Manual 4120.3-M, the following designation changes are implemented in this amendment:

"Type A and B" as specified in MIL-R-398C is changed to "Type I and II" and "Class A, B, C, D, E, F, G, H" as 6, 7, 8". In the next revision of the affected specification, these changes will be implemented."

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The margins of this amendment are marked with an asterisk or vertical lines to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of them arginal notations and relationship to the last previous amendment.

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