

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

GRENADE, HAND, IRRITANT, CN-DM, M6A1

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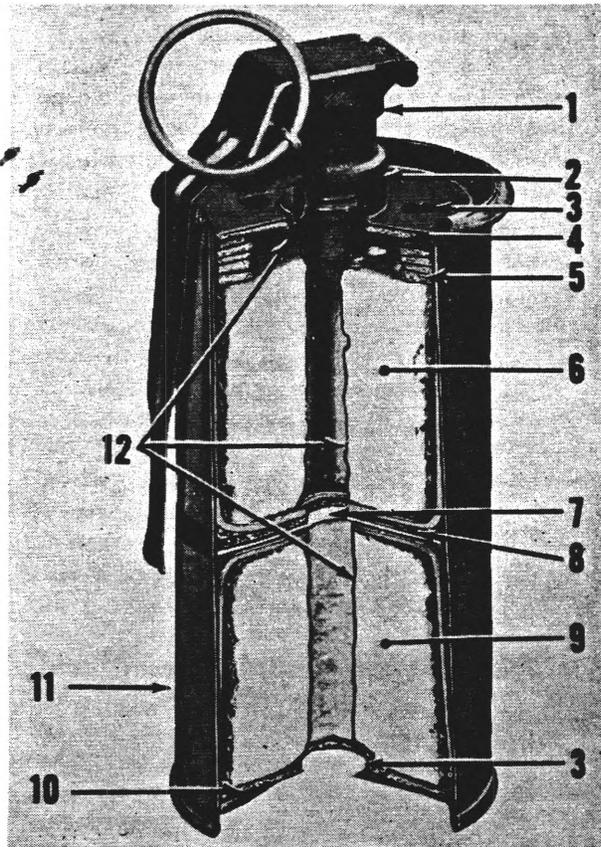
1. Scope. This bulletin contains a description of the M6A1 CN-DM irritant hand grenade and instructions for its use, shipment, and storage.

2. References. A list of reference publications is given in the appendix.

3. Description. *a. General.* The M6A1 CN-DM irritant hand grenade (fig. 1) is a special-purpose munition similar in size and shape to the M6 CN-DM grenade (TM 3-300). It differs from the M6 grenade in that the CN and DM fillings are not intimately mixed but are pressed into individual metal cups, packed in the grenade body in such a manner that there is no contact between the two types of filling before ignition of the grenade. The complete grenade (with fuze) weighs approximately 1¼ pounds. The grenade is ignited by an M201A1 grenade igniting fuze (TM 3-300) and can be projected by hand, or from a rifle or carbine using an M2A1 grenade projection adapter. It will function reliably under all weather conditions and at temperatures from -65° to 125° F.

b. Grenade Body. The body of the M6A1 CN-DM grenade (11, fig. 1) is a thin sheet metal cylinder, approximately 4½ inches long and 2½ inches in diameter, with five emission holes. The emission holes, four in the top (3) and one in the bottom, are covered with adhesive tape (not shown) to protect the filling from moisture. A threaded steel fuze adapter (2) for an M201A1 fuze (1) is welded into a hole in the top of the grenade.

c. CN Filling. The CN filling (9) is contained in a pressed steel cup, which is approximately 2¼ inches in diameter and 2 inches high. The bottom of the cup has a ½-inch hole at its center. A tapered hole through the middle of the filling is lined with starter mixture (12). Minimum weight of the CN filling is 140 grams. Composition of the CN filling is as follows:



- | | |
|-----------------------|--------------------|
| 1 Fuze | 7 Plastic disk |
| 2 Fuze adapter | 8 Asbestos gasket |
| 3 Smoke emission hole | 9 CN filling |
| 4 Asbestos disk | 10 Asbestos gasket |
| 5 Asbestos gaskets | 11 Body |
| 6 DM filling | 12 Starter mixture |

Figure 1. M6A1 CN-DM irritant hand grenade, sectioned view.

Component	Percent (by weight)
Chloracetophenone.....	29
Potassium chlorate.....	24
Sugar.....	17
Potassium bicarbonate.....	25
Diatomaceous earth.....	5

d. *DM Filling.* The DM filling (6) is contained in a metal cup identical with that containing the CN filling. A tapered hole through the middle of the filling is lined with starter mixture. The top surface of the filling is also coated with starter mixture. Minimum weight of the DM filling is 130 grams. Composition of the DM filling is as follows:

Component	Percent (by weight)
Diphenylaminechloroarsine.....	52.5
Potassium chlorate.....	25.5
Sugar.....	17.0
Magnesium oxide.....	5.0

e. *Filling Components.* The bottom of the grenade body is covered with an asbestos gasket (10). The cup containing CN filling is inverted over the gasket. A solid plastic disk (7) and an asbestos gasket (8) are placed on top of the cup. The cup containing DM filling is placed, open end up, on the gasket. Two or more asbestos gaskets (5) are used in the top of the grenade to hold the filling components firmly in place. An asbestos disk (4), pierced with five holes which correspond to the holes in the top of the grenade, is crimped to the underside of the top of the grenade.

4. **Operation and Functioning.** a. *Throwing Grenade.* Hold the grenade in the throwing hand with the fuze safety lever held tight against the grenade. Remove the safety pin with the free hand and throw the grenade. The fuze begins to function when the grenade is thrown and the safety lever is released. Releasing the safety lever allows the striker of the fuze to hit the primer, which ignites a delay element which burns for 0.7 to 2.0 seconds. Upon expiration of the delay time, the delay element ignites the ignition mixture, which ignites the starter mixture coating the top surface and the center hole of the DM filling. This action ruptures the polyethylene disk separating the DM and CN fillings and ignites the starter mixture on the surface of the hole through the CN filling. The adhesive tape is blown off the five smoke emission holes, and CN-DM gas is emitted for 20 to 60 seconds.

Caution: Do not remove the grenade from the sealed metal can in which it is packaged until

shortly before the grenade is to be used. Exposure of an unpacked grenade to rain may cause the grenade to misfire. High atmospheric humidity may also cause a misfire.

b. *Launching Grenade.* The grenade may be launched from a rifle or carbine by using the M2A1 grenade projection adapter (TM 3-300).

5. **First Aid.** The gas from the grenade will cause vomiting and tears. Remove casualties to fresh air (FM 21-40).

6. **Marking.** The body of the grenade is painted gray with one red band. Nomenclature (GAS CN-DM), lot number, and date of filling are marked on the body in red.

7. **Packing and Shipping.** Each M6A1 CN-DM grenade is packaged in a sealed cylindrical metal container. Sixteen individually packaged grenades are packed for shipment in a nailed and strapped wood box displacing 0.8 cubic foot. Army Regulations 55-105, 55-155, 55-225, 55-228, TM 38-705, and Interstate Commerce Commission regulations govern the shipment of chemical munitions within the zone of interior. Oversea shipments should be made in compliance with SR 55-730-10, TM 3-250, and TM 38-705.

8. **Storage.** a. The M6A1 CN-DM grenade is classified for storage purposes in storage group D (incendiary and readily flammable). Chemical munitions of one storage group must not be stored with those of any other group or with any other type munition or component. Group D chemical munitions must be stored in a dry, fire-resistant magazine. Store the grenades in the boxed packages in which they are shipped. Stack the boxes in such manner that good ventilation is provided to all parts of the stack. Protective masks and fire-fighting equipment must be available. See TM 3-300 for quantity-distance storage tables.

b. If M6A1 grenades are kept in their wood shipping boxes protected from direct exposure to the elements, they may be stored for periods in excess of 2 years. Storage may be at temperatures from -80° F. to 160° F.; however, storage at high temperatures reduces the effectiveness of CN.

APPENDIX
REFERENCES

DA Pam 108-1 Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings.
DA Pam 310-3 Index of Training Publications.
DA Pam 310-4 Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply
Bulletins, Lubrication Orders, and Modification Work Orders.
AR 320-50 Authorized Abbreviations.
SR 55-730-10 United States Army, Navy, and Air Force Joint Ocean Shipping Procedures.
SR 320-5-1 Dictionary of United States Army Terms.
FM 21-5 Military Training.
FM 21-6 Techniques of Military Instruction.
FM 21-30 Military Symbols.
FM 21-40 Defense Against CBR Attack.
TM 3-215 Military Chemistry and Chemical Agents.
TM 3-250 Storage, Shipment, and Handling of Chemical Agents and Hazardous Chemicals.
TM 3-300 Ground Chemical Munitions.
TM 9-1900 Ammunition, General.
TM 38-705 Army Shipping Document.
Interstate Commerce Commission Regulations.

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USA Air Def Bd Test Sec	Svc Colleges	Sectors, USA Corp (Res)
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USA Avn Bd	PMST Sr Div Unit	
US ARADCOM	Gen Depot	

NG: State AG; units—same as Active Army.

USAR: None.

For explanation of abbreviations used, see AR 320-50.