



Standard Specification for Chemical Warfare Vapor Detector (CWVD)¹

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INTRODUCTION

The primary function required for the chemical warfare vapor detector (CWVD) is as a chemical warfare agent (CWA) point detector that can be used to detect, identify, quantify, and warn personnel of the presence of vapor or gas phase CWAs. The CWVD will provide visual and audible indicators and alarms, it will display the CWA class and point concentration, and it will record and store CWA concentrations as a function of time. This information will be made available locally and for transmission to a remote location.

1. Scope

1.1 This specification covers the technical and mission requirements for the use of a CWVD and relates each of the performance and electrical shock and fire parameters to a detector requirement. Refer to **Table 1** for reference material correlation.

1.2 This specification also defines the interfaces between the CWVD, communication systems, service platforms, and power sources. Refer to **Table 1** for reference material correlation.

1.3 The CWVD will be used to sample air and report concentrations of the following nerve and blister CWAs: GA, GB, GD, GF, VX, HD, L, and HN₃. The CWVD is required to distinguish between agent types with the exception of G type agents. The CWVD may work in conjunction with other detection devices to provide a broader range of detection and identification.

1.4 The definitions in this specification apply only to this specification and shall be the determining factor(s) when interpreting any word or combination(s) of words. Definitions for selected terms are in Section 3. The reader is strongly encouraged to review these definitions before reading the requirements section.

1.5 The values given in SI units are to be considered the standard. The values given in parentheses are for information only.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D 543 Practices for Evaluating the Resistance of Plastics to Chemical Reagents

D 2240 Test Method for Rubber Property—Durometer Hardness

2.2 Federal Standards:³

10 CFR 30 Rules of General Applicability to Domestic Licensing of Byproduct Material

10 CFR 31 General Domestic Licenses for Byproduct Material

AMCR 385-100 Army Materiel Command Regulation

AR 190-59 Chemical Agent Security Program

AR 200-2 Environmental Effects of Army Actions

AR 50-6 Chemical Surety

ATT 178 Edgewood Chemical and Biological Center, Applied Test Team - Method for Evaluating Detectors

CFR 40 Protection of Environment

49 CFR, Parts 171 -179, International Civil Aviation Organization—Technical Instructions for Safe Transportation of Dangerous Goods by Air (ICAO-TDGA)

FM 3-5 Army Study Guide - NBC Decontamination

MIL-HDBK-217F Reliability Prediction of Electronic Equipment

MIL-HDBK-781A Department of Defense Handbook for Reliability Test Methods, Plans, and Environments for Engineering, Development Qualification, and Production

MIL-STD-461E Department of Defense Interface Standard:

¹ This specification is under the jurisdiction of ASTM Committee E54 on Homeland Security Applications and is the direct responsibility of Subcommittee E54.01 on CBRNE Sensors & Detectors.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.