EFFECTS ON MATERIALS

Polycarbonate damage from a peroxide-based decontaminant.

FOR MORE INFORMATION

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Chemical and Biological Material Effects (CB | ME) Database

A New Tool for Defense Critical System Developers

BACKGROUND

Department of Defense (DoD) Instruction (DoDI) 3150.09, "The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy" addresses the requirements of Public Law 108-375, the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005. This Public Law directed the Secretary of Defense to establish a centralized database that contains information on the effects of chemical and biological (CB) agents and decontaminants on the materials used in defense-critical systems. The Public Law also directed that the database be easily accessible to personnel who have responsibilities to ensure the survivability of defense critical systems.

In addition to the database, survivability Test Operating Procedures (TOP) are being updated and new TOPs are being written to address the requirements of DoDI 3150.09. One new TOP is being prepared specifically to address the generation of data for the CB|ME Database and subsequent use of the data by the development community. All new and revised TOPs include directions to facilitate the transfer of test data and reports to the CB|ME Database.

CB|ME DATABASE

The CB|ME Database is an online tool for personnel responsible for designing and providing defense-critical systems, which are required to be survivable to CB contamination threats. This database, developed by the Army Research Laboratory, Survivability/Lethality Analysis Directorate (ARL/SLAD) and Chemical, Biological, Radiological, and Nuclear Defense Information Analysis Center (CBRNIAC), is based on Joint Service needs from both government and contractor perspectives. The CB|ME Database contains comprehensive information on the effects of CB agents, simulants, and decontaminants on materials used in defense systems. The content consists of elements from the Chemical Defense Materials Database (CDMD) and the U.S. Air Force Research Laboratory's Chemical Warfare Defense (CWD) Materials Database and includes data from technical reports on more than 500 materials that have been exposed to chemical warfare agents, biological warfare agents, simulants, and/or decontaminants. Content is being increased by ongoing review and extraction of test data previously not accessible to the community.

CB|ME DATABASE FEATURES

- Browse
- Quick Search
- Advanced Search
- Test Nomination
- Test Nomination Endorsement

The "Browse" feature allows users to list taxonomies according to material, challenges, test locations, CB document number, and current testing nominations. The "Quick Search" feature will obtain broad results for material/challenge effects data. This feature also searches synonyms of the material and challenge, such as trade and common and formal names. The "Advanced Search" feature enables the user to conduct more complex searches on specific material properties effects and challenge data of interest. The "Test Nomination" feature is used to submit requests for future materials effects testing to fill existing data voids, which will assist the government in prioritizing future materials testing based on community needs. The "Test Nomination Endorsement" feature allows users to endorse existing nominations.

Query results may be previewed to see how many records have been identified from a particular search, which allows the user to narrow the search. Result pages from searches have configurable data columns and test documents can be reviewed and downloaded in a PDF format.

The ARL/SLAD is responding to the initiatives of DoDI 3150.09 for CBRN survivable systems by continuing to collaborate with the test community to ensure that future material effects test data is captured and incorporated into the Database. The success and broad utilization of the CB|ME Database is heavily dependent on the development and test communities. This dependence arises from the need for these communities to provide material effects data to the Defense Technical Information Center for inclusion in the CB|ME Database.