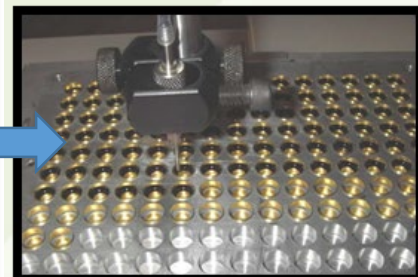


DBX-1 - Green Primary Explosive Demonstration in Detonators to Replace Lead

PROJECT OVERVIEW/DEMONSTRATION

There are thousands of DoD items that use lead azide and lead styphnate as primary explosives that poses health and environmental hazards. Inclusion of lead azide in weapon systems is largely dependent on a depleting stockpile. Increasing environmental regulations and health concerns have limited its production and availability.

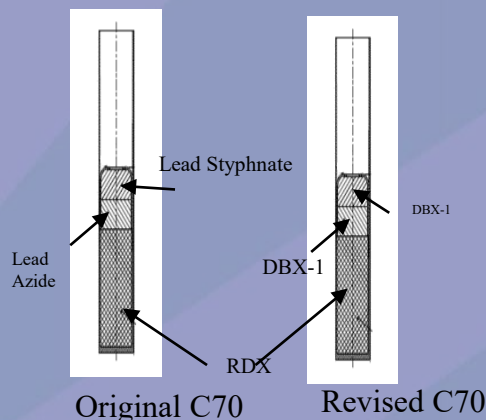
The project team will optimize the current coating method and demonstrate coated DBX-1 as a lead azide and a lead styphnate replacement in detonators such as the C70 used in the M213 Fuze (used in the M67 Hand Grenade). They will also work with a detonator manufacturer to load DBX-1 with replacement lead based materials in C70 detonator and perform full spec performance test.



Current loading method vs. Automated loading method

BENEFITS

This substitution will benefit all Joint Program Executive Office Armaments & Ammunition (JPEO A&A) items across many fuzes that contain detonators/primers/initiators and have lead based material. Using DBX-1 will require less materials due to its density and performance output. It will reduce operator exposure; reduction in hazardous waste for all involved. U.S. Army Public Health Command completed a health risk assessment of DBX-1 which was published in Toxicology Report No. S.0002730-13 (October 2013) and found the compound to be relatively harmless based on the Microtox test. It is insoluble in water and poses no risk to ground water.



C70 Detonator Layout

DoD Executive Agent

Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

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FOR FURTHER INFORMATION

National Defense Center for Energy and Environment

<http://www.denix.osd.mil/ndcee/home>

JPEO PM-CCS

<https://jpeoaa.army.mil/jpeoaa/>

FCDD-ACM-EW, CCDC-AC

<https://www.pica.army.mil/Picatinny/>