



FACT SHEET

Office of the
Assistant Secretary of Defense (Health Affairs)
Deployment Health Support Directorate

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Deseret Test Center

DTC Test 70-11, Phase I, Subtest 3

Shortly after President Kennedy's inauguration in 1961, the Secretary of Defense, Robert McNamara, directed that a total review of the U.S. military be undertaken. The study consisted of 150 separate projects. The chemical and biological warfare review was known as Project 112. As part of the Project 112 review, the Joint Chiefs of Staff convened a working committee that recommended a research, testing, and development program for chemical and biological weapons. To oversee this program, the Deseret Test Center (DTC) was established at Fort Douglas, Utah, in 1962. Both land-based and ship-based tests were conducted during the period 1962 – 1973. The Deseret Test Center closed in 1973.

The purpose of DTC Test 70-11, Phase I, Subtest 3 was to provide deposition data for the advanced development test of the TMU-28/B spray system fitted with the MLU-40/B cutter assembly and to evaluate the F-100 and/or the F-4 Series Aircraft-TMU-28/U spray system with agent simulants bis (2-ethylhexyl) hydrogen phosphite and trioctyl phosphate.

Seven operational trials of the TMU28/B spray system were conducted at Dugway Proving Ground, Utah. Payloads of bis (2-ethylhexyl) hydrogen phosphite and trioctyl phosphate simulants for agent VX were dispersed under a specified range of meteorological and operational conditions. In single tank trials, aircraft released simulant at altitudes from 200 to 800 feet above ground level. In dual tank trials, releases occurred from 200 to 1,600 feet above ground level.

The Department of Defense (DoD) is providing this information, at the request of the Department of Veterans Affairs (VA), to assist the VA in providing healthcare services to qualified veterans and to assist veterans in establishing service connection for disability claims. The Deployment Health Support Directorate (DHSD) collected this information from multiple sources and requested that the military services declassify it to allow its public distribution. The VA accepts this information provided on location, dates, units and/or ships, and substances involved in this exercise, which DHSD extracted from classified DoD records, and will provide it to individual veterans as necessary, but the VA cannot verify its accuracy.

DTC TEST 70-11, PHASE I, SUBTEST 3

2-2-2-2

Mixtures containing either bis (2-ethylhexyl) hydrogen phosphite or trioctyl phosphate, with zinc cadmium sulfide fluorescent particles (FP), Photo Flo, Aerosol C-61 or Arlancel 83, and oil red dye were used in DTC Test 70-11, Phase I trials.

DTC Test 70-11, Phase I, Subtest 3, was conducted between June 1972 and November 1973 at Dugway Proving Ground, Utah.

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DTC TEST 70-11, PHASE I, SUBTEST 3

3-3-3-3

Test Name	DTC Test 70-11, Phase I, Subtest 3
Testing Organization	US Army Deseret Test Center
Test Dates	June 1972 – November 1973
Test Location	Dugway Proving Ground, Utah
Test Operations	DTC Test 70-11, Phase I, Subtest 3 consisted of 7 trials. Payloads of bis (2-ethylhexyl) hydrogen phosphite and trioctyl-phosphite, simulants for agent VX, were dispersed under a specified range of meteorological and operational conditions.
Participating Services	US Air Force, Deseret Test Center personnel
Units and Ships Involved	USAF F-Series aircraft
Dissemination Procedures	In single tank trials, aircraft released simulant at altitudes from 200 to 800 feet above ground level. In dual tank trials, releases occurred from 200 to 1,600 feet above ground level.
Agents, Simulants, Tracers	bis (2-ethyl-hexyl) hydrogen phosphite trioctyl phosphate zinc cadmium sulfide (FP)
Ancillary Testing	Not identified
Decontamination	Not identified
Potential Health Risks Associated with Agents, Simulants, Tracers	<u>bis (2-ethyl-hexyl) hydrogen phosphite</u> This chemical compound used as an additive in industrial lubricants can cause acute irritation of the skin, eyes, and respiratory tract. There is insufficient evidence for or against long-term effects. (Source: NLM TOXNET, bis [2-ethylhexyl] hydrogen phosphite 3658-48-8, HSDB Human Health Effects, available at http://toxnet.nlm.nih.gov .)

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	<p><u>trioctyl phosphate</u> Used as a nontoxic simulant for VX nerve agent. Trioctyl phosphate is a viscous, colorless or pale yellow liquid. It can irritate the eyes, skin, and respiratory tract on contact. It can cause cancer in some animal species, but this has not been demonstrated in humans. (Sources: NLM TOXNET, Trioctyl phosphate 1806-54-8 or Tris [2-ethylhexyl] phosphate 78-42-2, HSDB Human Health Effects and Animal Toxicity Studies, available at http://toxnet.nlm.nih.gov http://physchem.ox.ac.uk/MSDS/TR/tris(2-ethylhexyl)phosphate.html [as of September 25, 2002] and http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/_icsc09/icsc0968.pdf [as of September 25, 2002]).</p> <p><u>zinc cadmium sulfide (FP)</u> This compound was aerosolized as a tracer material for the dispersion of biological warfare agents because it had similar properties. There has been little scientific study on the toxicity of this compound when inhaled. A National Research Council (NRC) committee focused on the cadmium component as potentially most toxic. While higher concentrations and more prolonged exposures to cadmium are associated with the development of lung cancer, the concentrations and durations of exposure in the Army's tests were substantially lower. The NRC committee concluded that the risk of adverse health effects to populations in the area was low. (Sources: National Research Council [National Academies], Toxicologic Assessment of the Army's Zinc Cadmium Sulfide Dispersion Tests, and Toxicologic Assessment of the Army's Zinc Cadmium Sulfide Dispersion Tests: Answers to Commonly Asked Questions, National Academy Press, Washington DC, 1997, both available at http://www.nap.edu [as of October 1, 2002]).</p>
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