FACT SHEET

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Deseret Test Center

DTC Test 74-10, Phase I

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 74-10, Phase I was to evaluate and assess the vulnerability of a marine amphibious force in LVTP-7 vehicles when subjected to selected forms of chemical attack. Test objectives were to determine exterior and interior contamination levels on an LVTP-7 exposed to a chemical attack using thickened simulant; to determine vapor contamination level inside a closed LVTP-7 exposed to a simulated Sarin attack and to verify the effectiveness of the M8A3 CPU; to determine the difficulty involved in decontaminating an LVTP-7 after an attack with a methacrylate-thickened material; to determine the effect of amphibious operations on an LVTP-7 contaminated with thickened simulant and VX simulant; to determine the amount of contamination personnel will receive while egressing from a contaminated LVTP-7 in an uncontaminated area; to determine the amount of contamination an LVTP-7 picks up while traversing areas contaminated with VX simulant and thickened Soman simulant; and to determine the effects of thickened simulant on painted surfaces of an LVTP-7.

Dimethylmethylphosphonate thickened with 2.3 percent polymethyl methacrylate and dyed with 0.5 percent oil red dye was used to simulate thickened Soman. Trichloropropane was used to simulate Sarin, and bis-(2-ethylhexyl)hydrogen phosphite was used to simulate agent VX.

The thickened dimethylmethylphosphonate and later the bis-(2-ethylhexyl)hydrogen phosphite were disseminated using three pneumatic atomization nozzles mounted in a line. For the trial using trichloropropane, two atomizer nozzles connected to a single Tygon tube in a Sigma pump were used.

A variety of decontamination methods were used to clean the LVTP-7 vehicle of dimethylmethylphosphonate. These methods included soap and water; scrubbing with soap and hot water; steam cleaning; a 10 percent solution of monoethanolamine in water with 0.3 percent Van Waters and Rogers 9N9 nonionic surfactant; and hot monoethanolamine. M12A1 power-driven decontamination apparatuses were used to apply the decontamination solution to the LVTP-7. The vehicle was scrubbed with stiff-bristle brushes and brooms.

DTC Test 74-10, Phase I, consisting of nine trials, was conducted in September and October 1973 at Dugway Proving Ground, Utah.

Test Name	DTC Test 74-10, Phase I
Testing Organization	US Army Deseret Test Center
Test Dates	September – October 1973
Test Location	Dugway Proving Ground, Utah
Test Operations	DTC Test 74-10, Phase I consisted of nine trials. Thickened dimethylmethylphosphonate, bis-(2-ethylhexyl)hydrogen phosphite, and trichloropropane were disseminated using pneumatic atomization nozzles to evaluate and assess the vulnerability of a marine amphibious force in LVTP-7 vehicles when subjected to selected forms of chemical attack.
Participating Services	US Marine Corps, Deseret Test Center personnel
Units and Ships Involved	Not identified
Dissemination Procedures	Thickened dimethylmethylphosphonate and bis-(2-ethylhexyl)hydrogen phosphite were disseminated using three pneumatic atomization nozzles mounted in a line. For the trial using trichloropropane, two atomizer nozzles connected to a single Tygon tube in a Sigma pump were used
Agents, Simulants, Tracers	Dimethylmethylphosphonate bis-(2-ethylhexyl) hydrogen phosphite Trichloropropane
Ancillary Testing	Not identified
Decontamination	Methods included soap and water;scrubbing with soap and hot water; steam cleaning; a 10 percent solution of monoethanolamine in water with 0.3 percent Van Waters and Rogers 9N9 nonionic surfactant; andhot monoethanolamine.M12A1 power-driven decontamination apparatuses were used to apply the decontamination solution

	to the LVTP-7. The vehicle was scrubbed with stiff-bristle brushes and brooms.
Potential Health Risks Associated with Agents, Simulants, Tracers	Dimethylmethylphosphonate Dimethylmethylphosphonate is used as a flame retardant, a preignition additive for gasoline, an antifoam agent, a plasticizer and stabilizer, a textile conditioner and antistatic agent, and an additive for solvents and low-temperature hydraulic fluids. May be harmful if inhaled, swallowed or absorbed through the skin. It is a suspected carcinogen.(Sources: http://ntp-server.niehs.nih.gov/htdocs/LT-studies/tr323.html and http://physchem.ox.ac.uk/MSDS/DI/diemthyl_methylphosphonate.html [as of June 5, 2003]). bis (2-ethyl-hexyl) hydrogen phosphite 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.) Trichloropropane Trichloropropane is a synthetic chemical that is also known as allyl trichloride, glycerol trichlorohydrin, and trichlorohydrin. It is a colorless, heavy liquid with a sweet but strong odor. It evaporates very quickly and small amounts dissolve in water. It is used as an industrial solvent, paint and varnish remover, and cleaning and degreasing agent. Exposure to high levels for a short time causes eye and throat irritation. (Source: http://www.atsdr.cdc.gov/tfacts57.html and http://www.osha-slc.gov/fts/chemicalsmapling/data/CH_273200.html [as of June 5, 2003]).

	Polymethyl methacrylate Polymethyl methacrylate is a clear plastic, used as a shatterproof replacement for glass. It is used in the production of Plexiglas® and Lucite®. Polymethyl methacrylate is also found in paint. Acrylic "latex" paints often contain polymethyl methacrylate suspended in water. Polymethyl methacrylate is a vinyl polymer, made by free radical vinyl polymerization from the monomer methyl methacrylate. (Source: http://www.psrc.usm.edu/macrog/pmma.htm [as of June 5, 2003]). Monoethanolamine Monoethanolamine is a clear liquid with an ammonia-like smell. It causes eye and skin burns, harmful or fatal if swallowed, may cause dizziness and drowsiness, causes respiratory tract irritation and possibly damage. Chronic exposure to the skin may cause a persistent irritation or dermatitis. Repeated inhalation may cause lung damage. (Source: Material Safety Data Sheet http://www.astrochemicals.com/10129.pdf [as of June 5, 2003]).