

Guidelines/Criteria	
	Reference: Silkworth JB, McMartin DN, Rej R, Narang RS, Stein VB, Briggs RG, Kaminsky LS. 1984. Subchronic exposure of mice to love canal soil contaminants. Fundam Appl Toxicol 4:231-239.
In vivo Study Type Route of Administration Species & age of animals	inhalation to volatile components of contaminated soil female CD-1 mice
Study Duration	90 days with interim sacrifice time points (each 4 weeks)
Type of Mixture Binary >2 components Similar acting or dissimilar What Mode of Action was investigated?	no yes dissimilar action assumed repeated dose toxicity
Parameters/End points Measured Target organs/Critical effects Pharmacological changes or adverse effects	Body weight, Histopathology, Haematology, serum enzymes Adverse effects
Individual Components Characterisation of individual compounds Name, exact chemical name, CAS no.	yes Mean concentrations (µg/m ³) in fresh soil (low and high range) m-Dichlorobenzene (18 (7-34)), p-Dichlorobenzene (27 (11-77)), o-Dichlorobenzene (22 (7-90)), Hexachloroethane (8 (0.3 - 49)), 2,5 + 2,6 Dichlorotoluene (121 (6-1059)), 1,3,5-Trichlorobenzene (16 (2-113)), 3,4-Dichlorotoluene (59 (17-257)), a,a-Dichlorotoluene (21 (1-197)), 1,2,4-Trichlorobenzene (24 (2-126)), o,o-Dichlorotoluene (8), 1,2,3-Trichlorobenzene (66 (7-255)), 1,2,4,5-Tetrachlorobenzene (106 (10-523)), Pentachlorobenzene (126 (4-1065)), Hexachlorobenzene (3 (0.3-42)), a-Benzenehexachloride (23 (0.7-273)), Lindane (27 (1-364)), d-Benzenehexachloride (55 (2-606)), Chloroform (7 (1.5-18.7)), 1,1,1-Trichloroethane (4.1 (1.5-13.9)), Carbontetrachloride (1.0 (0.4-2.4)), Trichloroethylene (1.3 (0.1-3.9)), Tetrachloroethylene (16.9), 1,1,2-Trichloroethane (5.7 (0.8-13.3)), Bromodichloromethane (1.0 (0.2-2.7)), 1,2-Dibromoethane (2.2 (0.6-4.7))
Were dose responses established for individual components? Were no effect levels established? Were doses below the NO(A)ELs investigated?	No, an environmental mixture was administered. Yes Yes
Mixtures Investigated Number of dose levels	4 dose groups: 1 kg contaminated soil without direct contact to soil (soil was replaced every week) 1 kg contaminated soil without direct contact to soil covered by a polystyrene lid (soil was replaced every week) 1 kg contaminated soil with direct contact to soil (soil was replaced every week) 1 kg contaminated soil with direct contact to soil covered by a polystyrene lid (soil was replaced every week) airborne concentration of the above mentioned chemicals was determined.
How does the mixture make-up compare to individual components? (e.g. low dose) equivalents used? No. of technical replicates per exposure condition (<i>in vitro</i>) No. of animals per dose group (<i>in vivo</i>)	An environmental mixture was administered. not applicable 10 mice / dose group // 5-6 mice/cage
Observations/Findings	Without direct soil contact: Increased relative thymus and spleen weights after 4 weeks of exposure, but not after 8 or 12 weeks. Mice exposed to 5- to 10-fold elevated concentrations of volatiles and increased body weights and increased relative kidney weights. With direct soil contact: Increased body weights (10%) and increased relative liver weights (169%) with centrilobular hepatocyte hypertrophy in 40-70% of the lobules in all mice. Mice exposed to elevated concentrations of volatiles had increased relative liver (184%) with centrilobular hypertrophy, spleen (125%) and kidney (114%).
Overall opinion (e.g. sufficient numbers of groups investigated, group sizes adequate, observations reproducible, low dose levels used investigated)	Valid study, sufficient animal numbers, Concentrations of the compounds in soil are given as µg/g soil, ranges of mean concentrations above soil (low and high ranges) are given as well as the differences between airborne concentrations in cages with and without lids.