

Evaporation and Degradation of HD on Soil

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The environmental fates of the highly toxic chemical warfare agent, HD (2, 2'-dichlorodiethyl sulfide, ClCH₂CH₂SCH₂CH₂Cl) after deposition onto an exterior surface are evaporation, degradation, absorption followed by degradation, and absorption with no degradation. The fates of the HD agent on various environmental surfaces including soil is of high importance for military commander to make decision whether the site needs to be decontaminated or is left until the HD agent degrades to nontoxic products over a period of time. Here, we report the evaporation and degradation of HD on soil, which were measured using a 5-cm wind tunnel and GC/MS analytical system. In particular, evaporation of HD on soil was examined at a variety of temperatures, wind speed, and drop volume.