

Study on the volatility and solubility of two pesticides: tecnazene and methyl 2,5-dichlorobenzoate

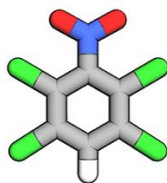
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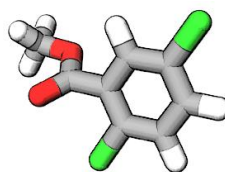
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Pesticides are widely used in agriculture and pest control. They include a diverse range of chemical compounds such as weed killers, insecticides, fungicides, and rodenticides. Even though these substances have a lot of good things to offer, their use can cause problems for the environment and people. Current research and knowledge of relevant properties of pesticides aim to develop safer and more sustainable solutions for pest management, fostering a balanced approach that ensures both agricultural productivity and environmental stewardship. This research aims to furnish crucial data on the experimental determination of pertinent physical-chemical properties thereby aiding the evaluation of mobility properties and environmental fate of the two pesticides Tecnazene (1,2,4,5-tetrachloro-3-nitrobenzene) and Methyl 2,5-dichlorobenzoate. The investigation encompasses the volatility (vapor pressures) and phase transitions of these compounds as well as the determination of their solubility in water (S_w) at 298.15 K. The sublimation properties obtained through vapor pressure measurements [1,2] were combined with those obtained through solubility experiments [3] resulting in additional crucial properties such as Henry's constants Gibbs energy of solvation. The fungicide tecnazene is a double action agent that acts as a grow regulator for plants to prevent potatoes from sprouting while they are stored, and to prevent tubers from rotting [4]. Methyl 2,5-dichlorobenzoate is also a fungicide applied to vine crops [5].



Tecnazene



Methyl 2,5-dichlorobenzoate

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NB : The final decision belongs to the Scientific Committee