Quantitative equilibrium calculations

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Tetrachlorobenzene

For assessing bioavailability and transport of pollutants in sediments it is necessary to know which fraction of it is sorbed and which fraction is freely dissolved. Calculate these fractions for 1,2,3,5-

tetrachlorobenzene. The K_{oc} -value of 1,2,3,5-tetrachlorobenzene is ca. 10⁴ L kg_{oc}⁻¹. The sediment has a

porosity of 90%, i.e. 90% of the total volume is water. The density of the solid material is 2 g cm⁻³; the organic carbon content is 10% (m/m).



1,2,3,5-tetrachlorobenzene

Answer:

 $f_{water} = 0.0045 \implies 0.45 \%$ are freely dissolved in water

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