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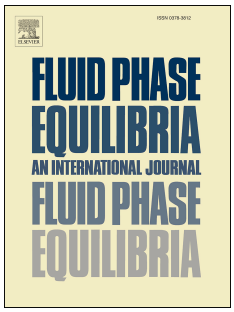

The behavior of mercury in water, alcohols, monoethylene glycol and triethylene glycol II. Elemental mercury solubility in alcohols, ethers and acetone; gas plant mercury distribution; and speciation in monoethylene glycol solution

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The behavior of mercury in water, alcohols, monoethylene glycol and triethylene glycol II. Elemental mercury solubility in alcohols, ethers and acetone; gas plant mercury distribution; and speciation in monoethylene glycol solution

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ABSTRACT

This short communication provides elemental mercury equilibrium solubilities in 1-hexanol, 1-decanol, 2-propanone (acetone), 2-[(propan-2-yl)oxy]propane (diisopropyl ether), and 1-butoxybutane (dibutyl ether) over the approximate temperature range, 255 to 333 K. Exponential expressions of the solubility are presented in the form: Solubility (ng/g) = Ae^{xt}, where t is in □C. In a low temperature separator at a gas field, mercury partitioning has been modelled. At separator temperature and pressure conditions of 263 to 267 K and 2600 to 3100 kPa, ~94 wt% of the mercury is calculated to report to the vapor phase, whilst ~3 wt% each reports to the condensate and aqueous phases. The aqueous phase consists of H_2O-rich monoethylene glycol (36 wt% MEG) used to inhibit gas hydrate formation. Sampling and analysis show that the H_2O-rich and H_2O-lean MEG streams contain predominantly particulate mercury. The use of this technical information is critical to planning for mercury removal, decontamination and waste minimization.