

UNEP report: no evidence that trifluoroacetic acid will have adverse effects on humans

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According to the 2009 Progress Report of the UNEP Environmental Effects Assessment Panel, presented at the 21st Meeting of the Parties to the Montreal Protocol in November 2008, there is no new evidence to suggest that trifluoroacetic acid (TFA), a breakdown product of HCFCs and HFCs, will have adverse effects on humans or the environment, given the small projected deposition of the substance in oceans.

Several HCFCs or HFCs can break down into TFA in the environment, which eventually ends in oceans and in lake waters. As TFA is very stable and very water soluble, it accumulates in the oceans where concentrations, largely from natural sources, are around 200 ng/L.

Compared to this value, TFA derived from a worst-case estimate of release of TFA from complete conversion of HFCs and HCFCs would result in an increase in concentration of TFA in the oceans by about 0.016 ng/L, a negligible increase above the background concentration.

Regarding the health impact of TFA, the Report notes that no adverse effects of TFA in mammals or humans were revealed in a recent search of the literatures, largely because concentrations causing measurable effects in organisms in the environment are large (222,000 to 10,000,000 ng/L) and thus provide a more than 1000-fold margin of safety for worst-case scenarios.

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