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REFRIGERATION SCIENCE AND TECHNOLOGY
FROID RECHERCHE

IIR DOCUMENT

Study on environmental and health effects of HFO refrigerants.

Number: pap. n. 1187

Author(s) : [FLEET D.](#), [HANLON J.](#), [OSBORNE K.](#), et al.



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Summary

Here we present the findings of a study on HFOs (hydrofluoroolefins) conducted on behalf of the Norwegian Environment Agency. The study had three aims: firstly to identify the HFOs used, their associated emissions, atmospheric dispersion, degradation of HFOs and the deposition of degradation products. Secondly, to assess the environmental and human health impacts associated with HFOs and their degradation products. Finally, a risk assessment was performed to assess how the future use of HFOs and their subsequent emissions would affect the environment globally up to 2100. A systematic review of the literature alongside consultation identified a number of knowledge gaps which need to be addressed to conclude whether HFOs and their degradation products, namely TFA (trifluoroacetic acid), will have negligible effect on the environment and human health. The risk assessment performed indicated the toxicity risk of TFA to organisms and human health appears to be low.

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