

Count of new chlorofluorocarbons in the atmosphere rises from four to seven

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Dr. Johannes Laube from the University of East Anglia has found two new chlorofluorocarbons (CFCs) and one new hydrochlorofluorocarbon (HCFC) in the atmosphere. The research comes after another four man-made gases were discovered by the same team in March. Credit: David Powell, UEA

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chlorofluorocarbons (CFCs) and one new hydrochlorofluorocarbon (HCFC) in the atmosphere.

The research, published today in the journal *Atmosphere*, comes after another four man-made [gases](#) were discovered by the same team in March.

Scientists made the discovery by comparing today's air samples with air collected between 1978 and 2012 in unpolluted Tasmania, and samples taken during aircraft flights.

Measurements show that all but one of the new gases have been released into the atmosphere in recent years.

Dr Johannes Laube, from UEA's school of Environmental Sciences, said: "Two of the gases that we found earlier in the year were particularly worrying because they were still accumulating significantly up until 2012. Emission increases of this scale have not been seen for any other CFCs since controls were introduced during the 1990s, but they are nowhere near peak CFC emissions of the 1980s.

"We have now identified another two CFCs and one HCFC, although these have much lower concentrations than the previous ones. It is therefore unlikely that they will pose a threat to the ozone layer. They do however strengthen our argument that there are many more gases out there and the sum of them may well have an impact."

Corinna Kloss, who undertook the research while at UEA, now at the Jülich Research Centre in Germany, said: "All seven gases were only around in the [atmosphere](#) in very small amounts before the 1980s, with four not present at all before the 1960s, which suggests they are man-made. Where these new gases are coming from should be investigated. Possible sources include industrial solvents, feedstock chemicals and

refrigerants."

CFCs are the main cause of the hole in the [ozone layer](#) over Antarctica. Laws to reduce and phase out CFCs came into force in 1989, followed by a total ban in 2010. This has resulted in successfully reducing the production of many of these compounds on a global scale.

Provided by University of East Anglia

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