



HFC-365mfc: European emission estimates for a new foam blowing agent

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Foam blowing agents are needed in the production of cellular polymers, which are widely used as insulation foams and packing materials. Chlorofluorocarbons (CFCs) were once used as relatively cheap blowing agents, but are now banned by the Montreal Protocol. In the early 1990s, one of these agents, CFC-11, was replaced by the hydrochlorofluorocarbon (HCFC) 141b, which still has a significant ozone depleting potential. Since 2003, the hydrofluorocarbon (HFC) 365mfc is used in Europe as a chlorine free replacement for HCFC-141b.

We report on European emission estimations for these substances, derived from the quasi-continuous measurements at the Swiss High Alpine station of Jungfraujoch (3580 m asl). We combine the measurements with backward trajectories to derive locations of emission sources.

We find that the magnitude and frequency of the pollution events of HFC-365mfc observed at the Jungfraujoch significantly increased since the early part of the measurement in winter 2002/2003. The analysis in terms of backward trajectories shows two major emission regions. One of them, the Po-valley in northern Italy, also shows strong emissions of HCFC-141b and CFC-11. The other region lies in eastern France. Here we find no prominent emissions of HCFC-141b and CFC-11, but the only production plant of HCF-mcf365 lies in this region. The emission likely stems from this plant or foam blowing industries nearby.