

**Interpretation IC 110-1995-1 of  
ASHRAE Standard 110-1995  
Method of Testing Performance of Laboratory Fume Hoods**

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**Request from:** Jerry F. Ludwig ([JLudwig@eheinc.com](mailto:JLudwig@eheinc.com)), Environmental Health & Engineering, Inc., 117 Fourth Ave., Needham, MA 20494.

**Reference:** This request for interpretation refers to the requirements in ASHRAE Standard 110-1995, Section 4.1, regarding the use of sulfur hexafluoride as the tracer gas for testing.

**Background:** Section 4.1 of Standard 110-1995 states that tracer gas used shall be sulfur hexafluoride. In light of the fact that SF<sub>6</sub> has a Global Warming Potential (GWP) that is on a mass basis more than 20,000 times Carbon Dioxide, is the Standards committee seeking alternative tracer gases or procedures to minimize the carbon footprint of this test.

**Interpretation:** Alternative tracers are acceptable if they meet the molecular weight guidelines, instrument response characteristics, and the limit of detection that sulfur hexafluoride achieves.

**Question:** Is this interpretation correct?

**Answer:** Yes. The standard, in Section 4.1.2, allows substitution of the tracer gas.

**Comments:** Some research conducted by Martin Burke at Technical Safety Services has shown that Nitrous Oxide (N<sub>2</sub>O), a compound with a much smaller molecular weight, may be an adequate substitute for sulfur hexafluoride. In the research, Mr. Burke demonstrated that the induced flow (the air entrained by the jet of tracer gas) is similar for the two tracer gases. The data generated by Mr. Burke indicates that Nitrous Oxide may be an appropriate substitute for Sulfur Hexafluoride.