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## **Tech Note P-100**

### **Measuring Ozone in an Occupied Room**

Ozone concentrations can vary greatly at various locations, and the concentrations are often highest in unexpected places. Key points to consider are:

- Ozone is much heavier than air and tends to sink to lower levels.
- Ozone has a low vapor pressure and so it does not try to fill the room uniformly. It tends to stay where it is.
- Ozone tends to cling to rough surfaces such as fabrics and breaks down (converts back to oxygen) when passing through restricted and obstructed passageways.
- Ozone reverts back to oxygen with a "half life" (time to go to half of its original concentration) typically of 10-30 minutes.
- Ozone can be confused by instrumentation with other oxidizing gases such as chlorine compounds, acid fumes, and oxides of nitrogen (NO<sub>x</sub>). Strong "reducing" gases, such as vapors of alcohol and solvents, can reduce the apparent concentration of ozone.
- Ozone has a sweet smell, but the odor threshold varies widely by the person and by ambient conditions. Therefore "smell" is not a reliable test for the presence or concentration of ozone.

#### **The important measurement is:**

**What is the ozone concentration at the breathing level where room occupants will be?**

**For ozone introduced via HVAC systems with good room air circulation, the alternate point of measurement is near the entrance to the return air duct.**