Office of Research Safety
Laboratory Safety Manual
804 Fume Hoods

1. Purpose

Many factors can compromise the efficiency of a hood operation. Most of these are avoidable; thus it is important to be aware of all behavior that can, in some way, modify the hood and its capabilities.

2. The following should always be considered when using a hood:

2.1. Keep fume hood exhaust fans on at all times.

2.2. If possible, position the fume hood sash so that work is performed by extending the arms under or around the sash, placing the head in front of the sash, and keeping the glass between the worker and the chemical source. The worker views the procedure through the glass, which will act as a primary barrier if a spill, splash, or explosion should occur.

2.3. Keep sash closed when an operation is left running.

2.4. Avoid opening and closing the fume hood sash rapidly, and avoid swift arm and body movements in front of or inside the hood. These actions may increase turbulence and reduce the effectiveness of fume hood containment.

2.5. Place chemical sources and apparatus at least 6 inches behind the face of the hood. A colored stripe may be painted on, or tape applied to, the hood work surface 6 inches back from the face to serve as a reminder. Ouantitative fume hood containment tests reveal that the concentration of contaminant in the breathing zone can be 300 times higher from a source located at the front of the hood face than from a source placed at least 6 inches back. This concentration declines further as the source is moved farther toward the back of the hood.

2.6. Place equipment as far to the back of the hood as practical without blocking the bottom baffle.

2.7. Separate and elevate each instrument by using blocks or racks so that air can flow easily around all apparatus.

2.8. Do not use large pieces of equipment in a hood, because they tend to cause dead spaces in the airflow and reduce the efficiency of the hood.

2.9. If a large piece of equipment emits fumes or heat outside a fume hood, then have a special-purpose hood designed and installed to ventilate that particular device. This method of ventilation is much more efficient than placing the equipment in a fume hood, and it will consume much less air.

2.10. Do not use for storage of equipment or chemicals. Keep only the equipment and chemicals needed for current operation.

2.11. Do not modify fume hoods in any way that adversely affects the hood performance. This includes adding, removing, or changing any of the fume hood components, such as baffles, sashes, airfoils, liners, and exhaust connections.