

# Lab Vent Control Banding Assessment v.1.5

## 1. Building Information

General information about building personnel and ventilation systems.

Questions in red are key information to be collected in the field

### \*1. Building Name

### 2. Building Wide Facility Coordinator or User Representative

### 3. Primary form of hood flow controls

- Constant Air Volume, continuously operating
- Constant Air Volume, on and off
- Variable Air Volume, high and low flows
- Variable Air Volume, continuously variable

### 4. Primary type of hood sash

- Vertical sash
- Horizontal sash
- Combination sash
- No sash

### 5. Primary Hood Operation Indicators

- Paper tell tale
- Hood alarm - audible only
- Pressure gauge
- Velocity readout

### 6. Occupancy Detectors

- None
- Tied to Light Switch
- Infrared
- Ultrasound
- Double detection

### 7. Notes on building systems

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## 2. Room Specific Information

Questions in red are key information to be collected in the field

### \*8. Rooms in this ventilation zone

Room 1	<input type="text"/>
Room 2	<input type="text"/>
Room 3	<input type="text"/>
Room 4	<input type="text"/>

### 9. Primary Lab Use

- Teaching - limited number of chemicals that change predictably
- Production - specific chemical processes that seldom change
- Changing Research - chemical process change routinely and unpredictably
- Stable Research - chemical process change infrequently

### 10. Lab Design Category

i.e. What was the original design concept for this lab?

- Wet Laboratory (hoods and sinks provided)
- Dry Laboratory (no hoods provided)
- Instrument Laboratory (point source exhausts provided)
- Chemical Storage room
- Photographic Darkroom
- Low Chemical Use Workroom or Studio

### 11. Primary Type of Chemistry

- Nanochemistry
- Biochemistry
- Organic chemistry
- Inorganic chemistry
- Low, but significant, chemical use

### 12. Number of hoods

	Width
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5 or more	<input type="text"/>

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## 13. Are there Ventilation Effectiveness Concerns?

"Ventilation effectiveness" refers to how well air within the laboratory is mixed so that all areas of the room receive the same air change rate. This can be assessed based on computational fluid dynamics modeling, measurement of air contaminants at different locations in the space, or use of visualization techniques.

A possible approach to addressing this concern within a specific laboratory is to provide local exhaust ventilation for sources located outside a fume hood. Assessing and addressing this issue relies upon the professional judgment of the qualified person identified by the Laboratory Ventilation Management Plan.

Yes, explain in Comments box for this section

No

## 14. What are the primary uses of the hoods in this lab?

	Active chemistry	Chemical storage	Equipment storage	Empty
Hood 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hood 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hood 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hood 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hood 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 15. Pressurization relative to hallway

Positive

Neutral

Negative

Unclear

## 16. Hood make up air requirements

Floor area (sq feet)

Ceiling height (ft)

Total width of hoods (ft)

Date of last certification

Certification velocity (fpm)

Certification sash height (ft)

## 17. Laboratory Supervisor(s)

## 18. Room ventilation notes or variations from rest of building

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## 3. Key Chemical Classes

This section identifies relevant properties of the laboratory chemical classes that the ventilation system is expected to control. This information is gathered based on information from a laboratory visit, review of chemical inventories and information from the laboratory workers.

### \*19. Chemical Class

**Small amount** indicates that less than 1 liter is actively used; **medium amount** is between 1 and 5 liter; **large amount** is more than 5 liters.

**Weak concentration** indicates that dilution lowers the hazards associated with the chemical as described on the MSDS; **Reagent concentration** indicates that the MSDS describes hazards adequately; **Concentrated concentrations** indicate that the hazards are greater than indicated by MSDS due to concentration

	Small amount	Medium amount	Large amount	Weak	Reagent	Concentrated
Flammable solvents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Halogenated solvents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corrosives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volatile toxics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flammable gases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asphyxiants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toxic gases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Specific information and notes

### 20. Chemical Warning Properties

- None (no odor associated with the chemical)
- Moderate (odor threshold near exposure levels of concern)
- Poor (odor threshold below exposure levels of concern)
- Good (odor threshold above exposure levels of concern)

### 21. Highest GHS warnings and other notes for chemicals

## 4. Other Laboratory Factors

Other laboratory process factors that affect the ventilation recommendation

### 22. Specific heat or contaminant sources

	0	1	2-5	5-10	>10
Number of Refrigerator(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of Freezer(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of Ultra Low Freezer(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of Ventilated Autoclaves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of Unventilated Autoclaves	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of heating element (s) or bunsen burners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of ovens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vacuum pumps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of other significant plug load appliances (e.g. centrifuge(s))	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Containers of cryogenic liquids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laser based instrumentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 23. Are there other local exhaust points?

(e.g. autoclave exhaust systems; operable windows; point source exhausts; canopy hoods)

### 24. What is the average number of people in the room when chemicals are used?

- unknown
  4 to 10  
 3 or fewer
  more than 10

### 25. Are animals or plants housed or used in the room?

- Yes
  No
  Unknown

### 26. Notes on Other Factors

## 5. Control Band Recommendation

### \*27. Primary criteria for selecting ventilation rate

- Makeup air for exhaust systems       Heat sources       Control of volatile chemicals       Occupancy requirements

Other (please specify)

### \*28. Ventilation Control Band Recommendation

- High ventilation rate
- Medium ventilation rate
- Low: single pass ventilation based on requirements for occupancy and temperature control
- Single pass ventilation not required: follow ASHRAE occupancy requirements
- Specific design required

### 29. Potential Indicators of under- or over- ventilation

- Temperature issues       Health symptoms
- Humidity issues       Oxygen deficiency
- Odors       Flammable atmosphere

Other (please specify)

### 30. Assessment Dates

Date of this assessment

Recommended date of next assessment

### 31. Assessor