

Table 1. Comparison of Biological Safety Cabinet Characteristics and Applications.

| Class, Type | Work Opening | Inflow Velocity (fpm) | Percentage Recirculated Air | Percentage Exhausted Air | Exhaust Volume (cfm) (approximate) | Exhaust Requirement | Application |
|-------------------|---------------------------|-----------------------|-----------------------------|--------------------------|------------------------------------|---|--|
| Class I | fixed | 75 | 0% | 100% | 4 ft - 200 6 ft - 300 | Exhausted to the outside (remote fan) or to the room through a HEPA filter (integral fan) | Biosafety Level 1-3; small amounts of toxic chemicals or radionuclides (if exhausted to outside) |
| Class II, type A | fixed, sliding, or hinged | 75-100 | 70% | 30% | 4 ft - 300 6 ft - 400 | Exhausted to room through HEPA filter | Biosafety Level 1-3 |
| Class II, type B1 | sliding | 100 | 30% | 70% | 4 ft - 250 6 ft - 400 | Exhausted to outside, with remote fan; duct is hard connected | Biosafety Level 1-3; small amounts of toxic chemicals or radionuclides |
| Class II, type B2 | sliding, hinged | 100 | 0% | 100% | 4 ft - 600 6 ft - 1000 | Exhausted to outside, with remote fan; duct is hard connected | Biosafety Level 1-3; small amounts of toxic chemicals or radionuclides |
| Class II, type B3 | sliding, hinged | 100 | 70% | 30% | 4 ft - 300 6 ft - 400 | Exhausted to outside, with remote fan, utilizing thimble, or hard connected duct | Biosafety Level 1-3; small amounts of toxic chemicals or radionuclides |
| Class III | glove ports | N/A | 0% | 100% | a | Exhausted to outside, through 2 HEPA filters, with remote fan; duct is hard connected | Biosafety Level 1-4; small amounts of toxic chemicals or radionuclides |

^a Class III cabinets should have approximately 20 air changes per hour or enough ventilation to accommodate the heat load. A negative pressure of 0.5 in. w.g. must be maintained and 100 fpm should be maintained through a glove port, if a glove is accidentally removed.