

ATTACHMENT C

Biological Safety Cabinets: Description of and appropriate Biosafety Levels for use.

Adapted from: "Biosafety in Biomedical and Microbiological Laboratories"; U.S. Department of Health and Human Services, National Institutes of Health, 5th Edition (2007).

Comparison of Biological Safety Cabinets

BSC Class	Face Velocity	Airflow Pattern	Applications	
			Nonvolatile Toxic Chemicals and Radionuclides	Volatile Toxic Chemicals and Radionuclides
I	75	In at front through HEPA to the outside or into the room through HEPA	Yes	When exhausted outdoors 1, 2
II, A1	75	70% recirculated to the cabinet work area through HEPA; 30% balance can be exhausted through HEPA back into the room or to outside through a canopy unit	Yes (minute amounts)	No
II, B1	100	30% recirculated, 70% exhausted. Exhaust cabinet air must pass through a dedicated duct to the outside through a HEPA filter	Yes	Yes (minute amounts) 1, 2
II, B2	100	No recirculation; total exhaust to the outside through a HEPA filter	Yes	Yes (small amounts) 1, 2
II, A2	100	Similar to II, A1, but has 100 lfpm intake air velocity and plenums are under negative pressure to room; exhaust air can be ducted to outside through a canopy unit	Yes	When exhausted outdoors (Formerly "B3") (minute amounts) 1, 2
III	N/A	Supply air is HEPA filtered. Exhaust air passes through two HEPA filters in series and is exhausted to the outside via hard connection	Yes	Yes (small amounts) 1, 2
<p>1. Installation may require a special duct to the outside, an in-line charcoal filter and a spark proof (explosion proof) motor and other electrical components in the cabinet. Discharge of a Class I or Class II, Type A2 cabinet into a room should not occur if volatile chemicals are used</p>				
<p>2. In no instance should the chemical concentration approach the lower explosion limits of the compounds.</p>				