
Biosafety Guidelines for Cell Sorting

UWCCC Flow Cytometry Laboratory
<https://cancer.wisc.edu/research/resources/flow/>

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Aerosols

Cell sorting is an aerosol-generating procedure, which greatly increases the risk of airway transmission of hazardous and infectious material. Aerosol incidents are not uncommon during normal sort procedures. These incidents can be caused by sample clogging and other disturbances that increase physical instability of the fragile single-cell stream.

OBS Pre-Approval for Cell Sorting

Every sort experiment must be described in the PI's Biological Safety Protocol and pre-approved by the Office of Biological Safety **prior to** requesting an appointment for cell sorting. The protocol number must be provided to the Flow Lab in the sort request.

The researcher and PI are responsible for disclosing all relevant risk associated with the sample to ensure proper risk assessment and assignment of containment equipment to protect staff and Flow Lab users.

Contact the Office of Biological Safety for more information:
<http://www.ehs.wisc.edu/biosafety.htm>

Sample Transport

Three layers of containment are necessary when bringing samples to the Flow Lab. Samples must be transported in leak-proof tubes. Tubes must be placed inside a sealed container, and that container carried inside a sealable cooler.

For example, bring samples in closed tubes, inside a Rubbermaid box with a lid, inside an Igloo cooler. The cooler and container will be opened inside the lab, and the tubes will be opened in the biosafety cabinet.

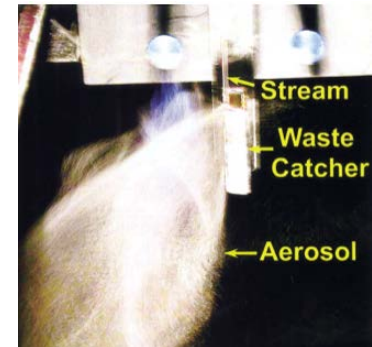
Additional Steps to Minimize Risk

Samples must be filtered immediately before sorting to minimize stream disruptions.

Both Aria sorters are housed inside biosafety cabinets.

Samples accepted for sorting must be classified at or below BSL2 when in aerosol. Samples exceeding BSL2 cannot be sorted in this facility.

Clogs Increase Aerosols



Spill Protocols

Spill protocols and a spill cleanup kit are available in the Flow Lab.

Resources & References

International Society for the Advancements of Cytometry Cell Sorter Biosafety Standards. *Cytometry A*. 2014 May; 85(5): 434–453.

Standard Safety Practices for Sorting of Unfixed Cells. 2007. *Current Protocols in Cytometry*. 39:3.6:3.6.1–3.6.20.

Mid-Atlantic Biosafety Association
www.mabsa.org
Best Practice in Biohazardous Cell Sorting
<http://www.mabsa.org/docs/MABSA%20Best%20Prac%20in%20Biohaz%20Cell%20Sorting%20chp%202011117.pdf>

Evolution of Biosafety in Flow Cytometry
www.mabsa.org/docs/flow