General

FACS sorters are aerosol producing machines. These aerosols contain cells and particles from the sorted samples. To minimize the risk for the sort operator and other people in the FACS lab, it is crucial to stick to the following rules.

Please note that in some cases your samples may need to be handled at a higher biosafety level for the duration of the sort due to the increased risk from aerosol formation. Contact c.dumrese@cytometry.uzh.ch if you have doubts about the biosafety classification of your sample!

General safety guidelines

- Wear gloves when operating the Aria with samples.
  *You may wear gloves when touching the mouse/keyboard but you will need to **spray your gloves with 70% EtOH every time** before touching them.*
- After you have finished the sort with samples
  - Switch off the stream
  - Spray the sort chamber with 70% EtOH and wipe dry
  - Spray the collection area, tube holder and sample loading port with 70% EtOH
  - Clean the whole work area with 70% EtOH including keyboard, mouse, the desk space and parts of the sorter you have touched during operation.

Waste decontamination

- First user of the day: add approximately 100 ml of 14% bleach (sodium hypchorite) to the **empty** waste tank prior to sorting.
- Last user of the day:
  Disconnect the full waste tank from the instrument and attach a spare empty waste tank. Transfer waste container to the cell culture and add additional bleach according to the fill level (**100 ml = full waste tank**, 50 ml = half tank, 25ml = quarter tank).
- The deactivated waste will be neutralized by the cytometry staff (Dayra and Eliska).

Use the AMO (aerosol management option) for all BSL-2 sorts

- Switch on the AMO and run it at 20% engine power while sorting one of the following samples:
  - Primary human cells from tested buffy coats from the blood bank
  - Primary human cells from patients in a clinical study which excludes all signs of infectious diseases
  - Primary Human cells originate from healthy known donors (known to the user who wants the cells to be sorted).
  - Virally transduced cell lines

  Double check that the AMO is actually running on its gauge on the side.
  → Needle higher than 0!

  If your sample does not fulfill these criteria above, contact the facility staff info@cytometry.uzh.ch to arrange sorting under higher biosafety conditions. (BSL-3 lab sorter Irchel)

Emergency shutdown and cleaning for partial or full nozzle clog

- If you observe processes causing aerosol formation like:
  - Aerosol formation can be seen in the side stream camera window
    ➔ random drops or horizontal line instead of individual streams
  - Indication for partial nozzle clog
    ➔ central stream bent towards one side,
- If the stream has not switched off automatically, stop sorting immediately. Switch off the stream in the software or use the **red emergency stop button**
- **Do not open the sorting chamber**
- Increase the AMO power to 100% and evacuate the room for 10 min
- After 10 min clean the sorting chamber and sample collection area with 70% EtOH avoiding any further aerosol generation. Do not spray into spills!
- Decontaminate the nozzle in FACS clean for 5 seconds
  Never sonicate the nozzle in FACS clean!
- Rinse nozzle with ddH_2O and sonicate the nozzle in ddH_2O for 30 seconds
- Reduce AMO power back to 20%

Biosafety Note: The nozzle has to be handled as if contaminated with biosafety class II level hazardous material and is to be transported and sonicated in a closed tube.

This instrument is supervised by the Cytometry Facility.
Please contact c.dumrese@cytometry.uzh.ch if you have any questions regarding biosafety.
or call+41 79 831 55 96 (Phil) 079 559 65 58 (Claudia) for help and further assistance.