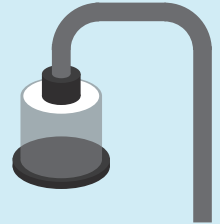


AIR TESTING INSTRUCTIONS

AIR FILTER CARTRIDGES (MCE FILTERS) FOR METALS ANALYSIS



The following provides a quick visual reference on how to set up and conduct air sampling using filter cartridges as the collection media, for metal analysis (as per NIOSH 7303).



FIGURE 1: General Setup

The general setup for air sampling involving the use of plastic filter cartridges as the collection media and personal pumps is illustrated in **Figure 1**. Alternatively, if it is not suitable to affix the pump to a worker (e.g. if workers at a facility tend to move around to the extent that they will not capture a representative air sample of a specific work station), you may choose to lay the filter/pump assembly on a table or chair within the area to be monitored. Care should be taken to select a location that is both representative of the air space, away from drafts or ventilation units and off the ground as these locations may bias the collection process.



FIGURE 2: Air Filter Cartridge

Testmark Laboratories will provide you with a filter cartridge specific to the type of contaminants you are testing (see **Figure 2** for an example). Filter cartridges are provided in sealed protective bags separate from the pump/collar clip and should be mounted in the collar clip holder by the client immediately prior to collecting the sample. They should not be mounted ahead of time and left open as they may become contaminated.

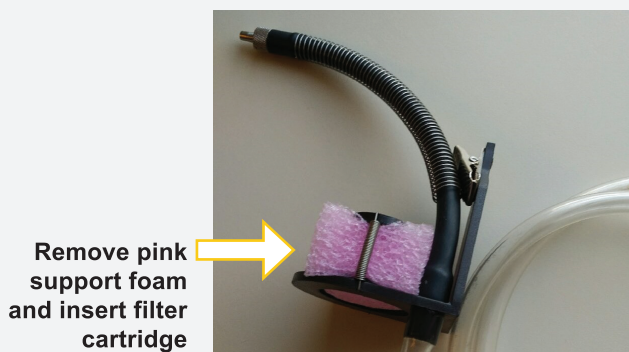


FIGURE 3: Collar assembly showing packing foam (to be removed when filter is inserted)

When ready to begin sampling, take the filter cartridge from the bag. Remove the red plastic plug on the outlet side of the filter (marked "outlet" on the plastic cassette) and retain this for later. Carefully remove the pink plastic support form (**Figure 3**) from the collar assembly, and insert the filter cartridge into the spring-loaded collar attachment, ensuring that the filter is placed in the correct orientation with the "inlet" (marked "inlet" on the plastic cassette) positioned on the opposite side from the collection tubing, and the "outlet" attached to the air pump tubing (**Figure 4**). Connect the black tube to the filter outlet, ensuring it is well connected.

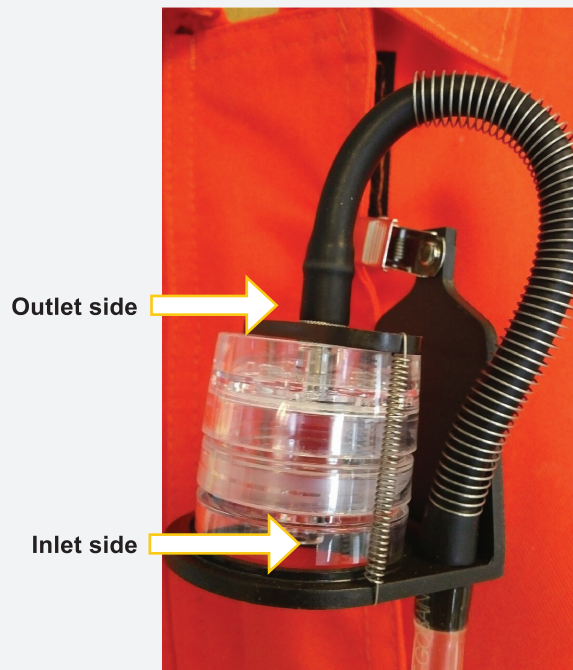


FIGURE 4: Collar assembly with filter cartridge inserted.

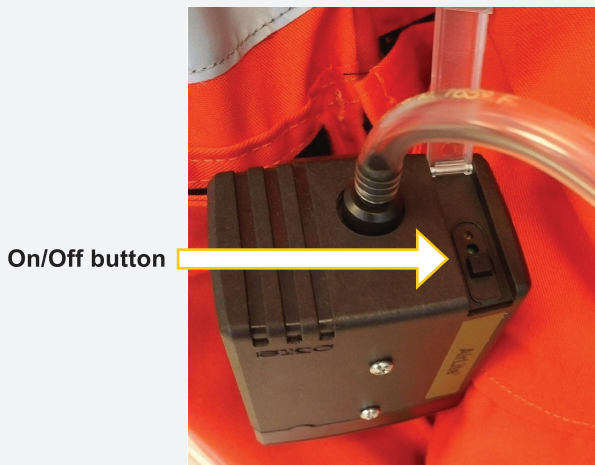


FIGURE 5: On/Off button with protective plastic cover

Position the filter cassette either on the worker, or on a stationary platform that is off the ground. The collar attachment allows for the user to clip the filter apparatus close to their personal breathing space, while the pump can be clipped on to a belt or waistband.

When ready to start sampling, remove the red plastic plug on the inlet side of the filter and retain this for later. Start the pump by pressing the on/off button (Figure 5) once (a green indicator light will turn on) and record the date and start time of sampling on the Chain of Custody. The pump has been pre-calibrated by Testmark for a flow rate of 1-4 L/min., which is the appropriate range for this method. Leave the pump running for the required amount of time (Testmark will provide you with guidance on the required sampling time depending on what tests you are having done). When finished, press the on/off button to turn the pump off (green indicator light will turn off). Immediately record the end time for that sample on your Chain of Custody.

Carefully remove the air filter from the collar assembly. Reattach the blue and red closure plugs and place the cartridge in a clean sample bag (provided). Be sure to label the outside of the bag with a unique Sample Description. Place samples and collar/pump assembly carefully in a cooler provided and return to a Testmark Laboratories near you, making sure to include your completed Chain of Custody.

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