

Choosing *MerPAS* Blank Type

An essential consideration sample collection with the *MerPAS* sampler is the assessment of Hg contribution associated with normal handling of the *MerPAS* sampler. Low, stable and consistent blanks confirms that each *MerPAS* sample collected only gaseous mercury when deployed and no contribution from contamination sources. The below guide provides an explanation of the different blank types and what they help assess. The type of blank collected will ultimately depend on what type of Hg contribution is to be assessed.

Field Blank: In general, most users want to assess the potential contamination due to regular handling of the sample. This includes all activities associated with use of the *MerPAS* sampler including deployment and collection of the sampler, all shipping activity, and laboratory analysis activities. A Field Blank should be exposed to all sample handling activities up to the point where the *MerPAS* jar is left opened for sampling. This would include removal of the Field Blank sample from its protective Ziploc bag at the field location, installing on the sampler mount, briefly attaching the screened sampling lid. The *MerPAS* screened lid is attached as fast as possible, followed immediately with reattachment of the solid lid. The sampler is placed back in the Ziploc bag and stored until the deployed samples are collected, and then accompanies the samples during shipping to the laboratory for analysis. This provides the best overall assessment of contamination from sample handling and analysis.



Trip Blank: The Trip Blank accompanies the samples during shipping, but is not exposed in the field. A Trip Blank assesses exposure during travel, storage and handling in the laboratory. This type of blank is helpful for customers using a contracted lab for analysis and have concerns about the potential for contamination during shipping activities that could contaminate the sample. For instance, shipping from remote locations might require the samples to sit in a contaminated warehouse facility for prolonged periods. A normal Field Blank would also capture this Hg contribution, but it would be uncertain if the measured Hg in the Field Blank was due to sample handling or shipping.



Material Blank: A Material Blank is used to test the quality of the *MerPAS* sorbent material. This type of blank is used to establish the background Hg level of the original *MerPAS* sorbent and any contribution from laboratory handling. Material Blanks are not exposed to field conditions or shipping. This type of blank verifies the sorbent material itself is not contributing significantly to the overall Hg in the sample. Material Blanks are helpful when *MerPAS* samplers have been stored in unclean environments or for long periods.

