PFAS Testing in Drinking Water

SAMPLE COLLECTION, PRESERVATION, AND STORAGE FACT SHEET

EPA Method 537.1

8.1. SAMPLE BOTTLE PREPARATION

8.1.1. Samples must be collected in a 250-mL polypropylene bottle fitted with a polypropylene screw-cap.

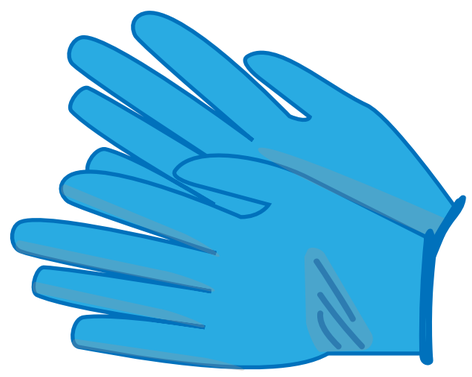
8.1.2. The preservation reagent, listed below, is added to each sample bottle as a solid prior to shipment to the field (or prior to sample collection).

5.0 g/L

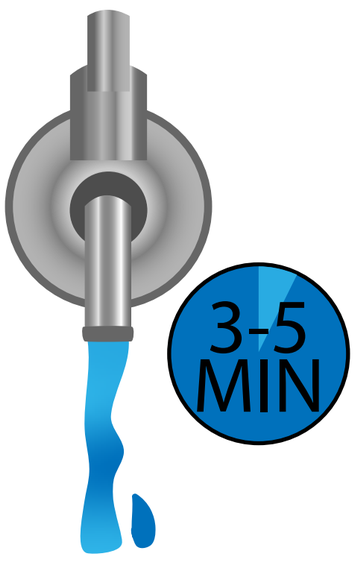
TRIZMA PRESET CRYSTALS, pH 7.0

8.2. SAMPLE COLLECTION

8.2.1. The sample handler must wash their hands before sampling and wear nitrile gloves while filling and sealing the sample bottles. PFAS contamination during sampling can occur from a number of common sources, such as food packaging and certain foods and beverages. Proper hand washing and wearing nitrile gloves will aid in minimizing this type of accidental contamination of the samples.



Prevent PFAS Contamination



8.2.1. Open the tap and allow the system to flush until the water temperature has stabilized (approximately 3 to 5 min). Collect samples from the flowing

8.2.2. Fill sample bottles, taking care not to flush out the sample preservation reagent. Samples do not need to be collected headspace free.

8.2.3. After collecting the sample, cap the bottle and agitate by hand until preservative is dissolved. Keep the sample sealed from time of collection until extraction.

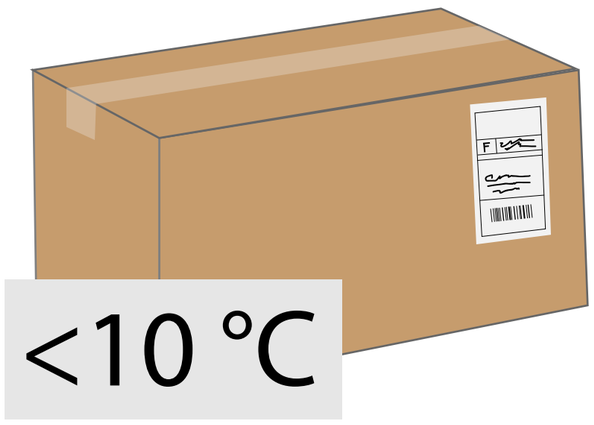
8.3. FIELD REAGENT BLANKS (FRB)

8.3.1. At the laboratory, fill the field blank sample bottle with reagent water, then seal, and ship to the sampling site along with the sample bottles. At the sampling site, the sampler must open the shipped FRB and pour the preserved reagent water into the empty shipped sample bottle, seal and label this bottle as the FRB.

The FRB is shipped back to the laboratory along with the samples and analyzed to ensure that PFAS were not introduced into the sample during sample collection/handling.

8.4 SAMPLE SHIPMENT AND STORAGE

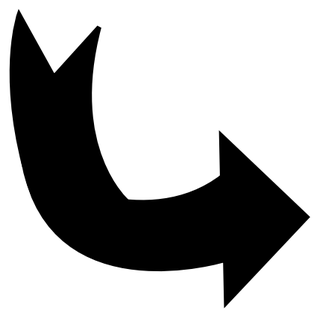
Samples must be chilled during shipment and must not exceed 10 °C during the first 48 hours after collection. Sample temperature must be confirmed to be at or below 10 °C when the samples are received at the laboratory.



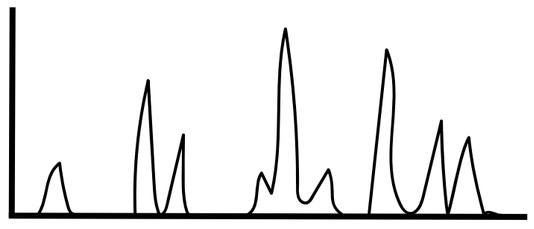
Samples stored in the lab must be held at or below 6 °C until extraction but must not be frozen.

8.5 SAMPLE AND EXTRACT HOLDING TIMES

Water samples should be extracted as soon as possible but must be extracted within 14 days. Extracts must be stored at room temperature and analyzed within 28 days after extraction



SOLID PHASE EXTRACTION AND LIQUID CHROMATOGRAPHY/ TANDEM MASS SPECTROMETRY (LC/MS/MS)



Shoemaker, J. AND Dan Tettenhorst. Method 537.1 Determination of Selected Per- and Polyflourinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). U.S. Environmental Protection Agency, Washington, DC, 2020.


Centrifuge
START
QUICK
OPEN
CAROLINA

SCIENCE COMMUNICATION 101

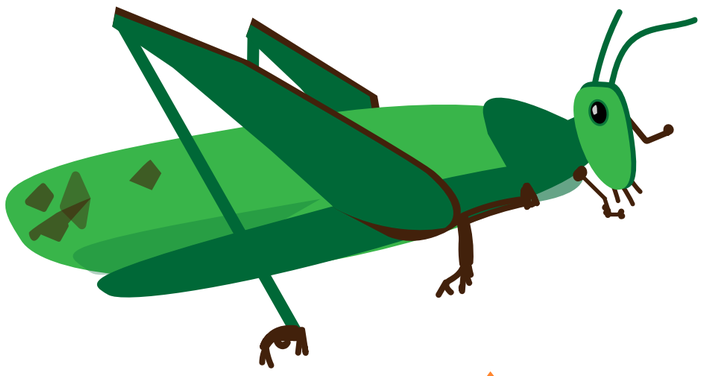
Know your audience

WHO are you talking to?
Consider their background knowledge and experiences

So What?

What is the impact of this scientific information?
What does it mean for everyday people and their communities?

Culturally Relevant Examples



Connect the science to people's lives, identities, and values

Clearly define your terms

What specialized words need to be defined for non-specialists?