How to Sample Your Tap for PFAS

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1.0 INTRODUCTION

This document provides instruction on how to collect a water sample at your home or business for analysis of per- and polyfluoroalkyl substances (PFAS). Step-by-step instructions are provided for how to find an analytical laboratory, collect the sample and label it, and package and ship the sample so it will safely arrive at the laboratory. A list of certified laboratories are also attached to these instructions (Attachment 1).

These instructions contain 2 Attachments:

Attachment 1 – List of Arizona Department of Health Services Certified Drinking Water Laboratories for EPA Test Method 533.

Attachment 2 – Material Safety Data Sheet for Trizma®, the sample preservative

2.0 HEALTH AND SAFETY

Personal protective equipment should be worn including unpowdered nitrile gloves, eye protection, and closed toe shoes when taking water samples. The sample bottles contain a preservative that should not come in contact with your skin. Cotton pants and long sleeve shirts can also protect the skin from the preservatives. PFAS are found in many every day household items such as food packaging, carpet treatments, and weatherproofing materials. Using clean, unused gloves and cotton clothes will also protect the sample from outside contamination.

3.0 AVOIDING SAMPLING CONTAMINATION

Avoid using cosmetics, scented products, moisturizers, and insect repellants on the day of sampling. If sunscreen is necessary try to use natural products that don't contain PFAS (e.g. Alba Organics Natural Sunscreen, Yes to Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss My Face). Do not sample with food, drink, fast food wrappers or containers near the sample location. Latex gloves and Teflon (plumber's tape) contain PFAS and should not be used in sampling for PFAS.

4.0 IDENTIFICATION OF A LABORATORY

Some things to be aware of when you contact the laboratory you have chosen:

- Most laboratories have pick-up and drop off sample centers in Phoenix if you want to avoid shipping charges.
- If you choose to ship your samples to the laboratory, they will need to be shipped the same day that they are collected in order to meet the 2-day sample holding time
- For both sample drop-off and shipment confirm that the lab is open on the day the samples should arrive to avoid delays in transport that may result in exceeding the 2-day sample holding time.
- Ask them to provide you with more than one sample bottle, just in case you need an extra. The bottle will be a polypropylene 250 mL bottle that already contains the correct amount of preservative.
- At a minimum you should receive sample bottle(s) and a custody tracking form from the laboratory.
- If you want to have the sample analyzed in duplicate, you will need two bottles per sample location, and the cost will increase proportionately.
- Confirm the cost of the analysis, and the number of samples you intend to have analyzed.
- The cost per sample is typically between $250 - $500, not including duplicates and shipping.

4.0 EQUIPMENT LIST

Analyte	Method	Sample Bottles	Sample Preservation (In bottle)	Sample Preservation (after collection)	Maximum Unfilled Bottle Holding Time	Maximum Filled Bottle Holding Time
PFAS	EPA Method 533	One 250 mL polypropylene (PP) bottle with PP screw-caps per sample	1.4 g Trizma® preservative per bottle	Keep the sample at or below 6 degrees C using wet ice	14 days	2 days

*if the bottles have not been used within 14 days, you should request new bottles from the laboratory.

- ☐ Sample bottle(s)
- ☐ Unpowdered nitrile gloves
- ☐ Sample labels
- ☐ Ball point pen
- ☐ Custody tracking forms (provided by the lab)
- ☐ Cooler (may be provided by the lab, depending on availability and how many samples you are collecting)
- ☐ **Wet ice is required,** no blue ice packs.
- ☐ Ziploc® Bags will be used to ensure that samples are not contaminated by other samples or by the ice used in the cooler.
- ☐ Shipping forms (if not dropping the sample off at a laboratory)
- ☐ Clear plastic shipping tape (if not dropping the sample off at a laboratory)

5.0 SAMPLE COLLECTION

Water samples should be collected from the sample tap at the wellhead **before any treatment.** Some households treat their water by adding softeners or passing their water through a filter (reverse osmosis, absorbent media or granular activated carbon filtration) prior to use. The sample may also be taken from a spigot located in the kitchen sink or outside the house, if the water exits the tap without treatment. Avoid taking samples from hoses or other attachments to the tap or to plumbing that may contain Teflon tape, as Teflon contains PFAS.

1) Fill out your sample labels.
    i) Preprinted labels should be supplied from the lab and should be filled out using a ball point pen. No Sharpie® or other markers can be used when sampling for PFAS
    ii) The label should include sampler's name, address, requested analytical method (EPA Method 533), and the sample preservative (Trizma®).
    iii) If labels are not already on the sample bottle when received from the laboratory, make sure to complete the labels and affix them to the bottles.
    iv) If you are sampling multiple wells used sample names to assist in identifying where the sample was taken.
    v) Sample label information should match the information provided on the custody tracking form (also provided by the lab).
2) Prepare your sampling area by removing any food packaging, wrappers or other materials that may contain PFAS
3) Thoroughly wash/rinse/dry your hands.
4) Flush the tap fully open for approximately 15 minutes.
5) Put your gloves on, use a clean pair of gloves for every sample collected.
6) Remove the sample bottle cap. The bottle top should be kept in your hand or placed facing upwards so that the portion of the cap that touches the bottle does not touch the surface. If you hold the cap in your hand, do not let anything touch the inside of the cap or the rim.
7) The sample bottle contains preservative so **DO NOT rinse the bottle**. Do not touch the preservative or the inside of the bottle.
8) Fill the sample bottle slowly, do not allow overflow from mouth of the bottle
9) After collecting the sample, cap the bottle and agitate by hand until preservative is dissolved. Do not reopen the bottle after the water sample has been added.
10) Write the sample time on the bottle label.

6.0 LABELING AND COMPLETING THE CUSTODY TRACKING FORM

1) Complete the custody tracking form provided by the lab for each sample.
    a) The form should include the sample location, sample date, sample time, and the analysis (Method 533) requested.
    b) The signature, date, and time of sample transfer of the person relinquishing the samples and the person receiving the samples should be completed at each handoff.
    c) If shipping the sample, the person receiving the shipment will fill in and sign the tracking form.
    d) This information helps the laboratory match the sample bottles to the correct chain of custody.
2) This form is a legal document and must be completed as accurately as possible.

7.0 TRANSPORT TO THE LABORATORY

a. Place sample bottles in separate quart-sized Ziploc bags. Also place the chain of custody form in a separate Ziploc bag.
b. Place the separately bagged sample bottles and completed/signed chain of custody in the cooler/ice chest with wet ice.
c. Wet ice is required to keep the samples preserved. Do not use blue ice packs.
d. If shipping the cooler to the laboratory, also bag the ice in Ziplocs to prevent water from leaking out of the cooler during shipment. Use clear plastic packing tape to seal the cooler before adhering the shipping documents to the top.
e. Samples must arrive at the lab within 2 days of collection.

8.0 RESULTS REPORT

The laboratory will send you a results report within the turn-around time specified for your order. A typical turn-around time for PFAS analysis is 10 days.

9.0 TROUBLESHOOTING AND ASSISTANCE

Do not use sample bottles that appear to be discolored, dusty, or structurally compromised. When in doubt get new sample bottles from the laboratory.

If the sampling, handling, or transport of a sample was compromised in any way, do not use the sample. Instead, re-take the sample, when possible.

If you need assistance with using these instructions, please contact David Burchard, at (602) 771-4298.

10.0 REFERENCES

Baird, Roger B., et al. “Standard Methods for the Examination of Water and Wastewater, 23rd Edition.” *2017.* Washington D.C. American Public Health Association, American Water Works Association, Water Environmental Federation.

EPA’s *Quick Guide to Drinking Water Sample Collection, November 2015*, EPA R8 2nd edition. https://www.epa.gov/sites/production/files/2017-04/documents/quick-guide-drinking-water-samplecollection-2ed-update-508.pdf.

“National Primary Drinking Water Regulations.” *Code of Federal Regulations*, Section Title 40, Chapter I, Subchapter D, Part 141. https://www.ecfr.gov/cgi-bin/textidx?SID=a7b87dc7cb53f891cff96d2a89ac67f8&mc=true&tpl=/ecfrbrowse/Title40/40cfr141_main_02.tpl

11.0 DOCUMENT APPROVAL

Role	Name	Signature	Date
SOP Lead	Paula Panzino		
Peer Reviewer	David Burchard		
QA/QC Specialist	Samara Taylor		

12.0 REVISION HISTORY

Revision Date	Author	Summary of Changes	Ref. Section

ATTACHMENT 1: Arizona Department of Health Services Certified Drinking Water Laboratories

All drinking water samples must be analyzed at a laboratory that has been certified by Arizona Department of Health Services (ADHS). Below is a list of ADHS laboratories certified to analyze drinking water samples using EPA Test Method 533. This list will be updated as ADHS certifies additional laboratories for the test method. Note that most of these laboratories have offices in the Phoenix area where sample containers can be pick-up and samples can be dropped off.

LABNAME	CITY	STATE	PHONE
Legend Technical Services of AZ, Inc.	Phoenix	AZ	(602) 324-6103
Eurofins Test America Sacramento	West Sacramento	CA	(916) 373-5600
SGS North America Inc. – Orlando	Orlando	FL	(407) 425-6700
Eurofins Eaton Analytical, LLC	Monrovia	CA	(626) 386-1100
Eurofins Eaton Analytical, LLC	South Bend	IN	(574) 233-4777
Anatek Labs, Inc.	Moscow	ID	(208) 883-2839
Eurofins Lancaster Laboratories Environmental, LLC	Lancaster	PA	(717) 656-2300

ALS Environmental	Kelso	WA	(360) 577-7222

ATTACHMENT 3: Safety data sheet for Trishydroxymethylaminomethane Buffer (Trizma®)

SAFETY DATA SHEET

1. Identification

Product identifier TRISHYDROXYMETHYLAMINOMETHANE BUFFER, pH 7.0

Other means of identification

Product code 5804

Recommended use professional, scientific and technical activities: other professional, scientific and technical activities

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name GFS Chemicals, Inc.

Address 800 Kaderly Drive
Columbus, OH 43228
United States

Telephone Phone 740-881-5501
Toll Free 800-858-9682
Fax 740-881-5989

Website www.gfschemicals.com

E-mail service@gfschemicals.com

Emergency phone number Emergency Assistance Chemtrec 800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 93.9% of the mixture consists of component(s) of unknown acute oral toxicity. 100% of the mixture consists of component(s) of unknown acute dermal toxicity. 100% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
TRISHYDROXYMETHYLAMINOMETHANE HYDROCHLORIDE	TRIS HYDROCHLORIDE TROMETHAMINE HYDROCHLORIDE	1185-53-1	93.9
TRISHYDROXYMETHYLAMINOMETHANE	TRIS THAM TROMETHAMINE 2-AMINO-2-HYDROXYMETHYL-1,3-PROPANEDIOL	77-86-1	6.1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. This product is miscible in water. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid.
Color	White.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	7 (16.5 g/L solution)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride. Carbon oxides.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test Results
TRISHYDROXYMETHYLAMINOMETHANE (CAS 77-86-1)		
Acute		
Oral		
LD50	Rat	5900 mg/kg
Other		
LD50	Mouse	3500 mg/kg
	Rat	2300 mg/kg

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	September-05-2018
Version #	01
Disclaimer	GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available