

Development of a PFAS Program

- The National Institute of Standards and Technology (NIST) first became aware of analytical challenges related to per- and polyfluoroalkyl substances (PFAS) in 2004 and began to build a program designed to support measurements for PFAS measurements.
- Development of this program by NIST researchers has cultivated:
 - Relationships with a range of stakeholders
 - Including chemical manufacturers, analytical laboratories, regulatory and non-regulatory government agencies, and academic researchers

There are 15 Existing NIST Reference Materials for PFAS and 9 new RMs in Development

What's Measured?

Soil – SRM 2586
Sediment – SRM 1936
Domestic Sludge – SRM 2781
House Dust – SRM 2585
Fish Tissue – SRMs 1946 (discontinued) and 1947
PFASs in Methanol – RM 8447
PFCAs and PFOSA in Methanol – RM 8446
Human Serum – SRMs 1957 and 1958
Human Plasma – SRM 1950
PFAS in Aqueous Film-Forming Foams (AFFF)
Formulation I – IV – RMs 8690, 8691, 8692, 8693



Multiple PFAS measured in the materials (qualitative and quantitative)

Need more NIST information on Reference Materials for PFAS?

Email: pfas@nist.gov

Interlaboratory Comparisons

Human-based Reference Materials (2010)

- Serum, human milk

Biological Reference Materials (2012)

- Fish tissue, bovine liver, mussel tissue, beluga liver, sperm whale liver, and dolphin liver

Abiotic Reference Materials (2015)

- Sediment, house dust, soil, domestic sludge

Commercial Products (2021)

- Aqueous Film-Forming Foams

Food (2024)

- Milk, egg, and beef

Non-Targeted Analysis Interlaboratory Comparison (2024)



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NIST Reference Materials Currently in Development

One PFAS in Drinking Water RM 8042
Two in Plant Materials RMs 8692-8693:
Corn Silage and Spinach
Three PFAS in Contaminated Meat Tissues
RMs 8694-8696: Beef Bull, Dairy Cow, Pork
Two PFAS in Contaminated Soils
One Fish Tissue SRM 1947a



Jar of meat homogenate



Preliminary AFFF impacted soil