



## Acronyms

<b>AACO</b>	Army Aviation Centre Oakey
<b>AA-QS</b>	annual average quality standards
<b>ADONA</b>	trade name for 4,8-dioxa-3H-perfluorononanoate
<b>AERMOD</b>	American Meteorological Society/EPA Regulatory Model
<b>AFCEC</b>	Air Force Civil Engineering Center
<b>AFFF</b>	aqueous film-forming foam
<b>ALT</b>	alanine aminotransferase
<b>amu</b>	atomic mass unit
<b>ANSES</b>	French National Agency for Food Safety, Environment and Labor
<b>ANSI</b>	American National Standards Institute
<b>AOF</b>	adsorbable organic fluorine
<b>APC</b>	air pollution control
<b>APFN</b>	ammonium perfluoronanoate
<b>APFO</b>	ammonium perfluorooctanoate
<b>ARAR</b>	applicable or relevant and appropriate requirement
<b>AM</b>	arithmetic mean
<b>ANPRM</b>	Advance Notice of Proposed Rulemaking
<b>ARP</b>	advanced reduction processes
<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>AWI</b>	Air-water interface
<b>AWQC</b>	ambient water quality criteria
<b>BAF</b>	bioaccumulation factor
<b>BARC</b>	bottom antireflective coatings
<b>BAT</b>	best available technology economically achievable
<b>BBMD</b>	Bayesian benchmark dose
<b>BCF</b>	bioconcentration factor
<b>BERA</b>	baseline ecological risk assessment
<b>bgs</b>	below ground surface
<b>BMD</b>	benchmark dose
<b>BMF</b>	biomagnification factor
<b>BMP</b>	best management practices
<b>BOHP</b>	$\text{Bi}_3\text{O}(\text{OH})(\text{PO}_4)_2$
<b>BSAF</b>	biota-sediment accumulation factor
<b>BuFASA</b>	<i>N</i> -butyl perfluoroalkane sulfonamide
<b>BuFASE</b>	<i>N</i> -butyl perfluoroalkane sulfonamido ethanol
<b>BuFASAA</b>	<i>N</i> -butyl perfluoroalkane sulfonamido acetic acid
<b>BV</b>	bed volume
<b>BW</b>	body weight
<b>C</b>	carbon
<b>C8</b>	historical name for PFOA
<b>C&amp;D</b>	construction and demolition

<b>CAA</b>	Clean Air Act
<b>CAC</b>	colloidal activated carbon
<b>CalEPA</b>	California Environmental Protection Agency
<b>CAP</b>	chemical action plan, or corrective action plan
<b>CAPEX</b>	capital expenses
<b>CAS</b>	Chemical Abstracts Service
<b>CBPR</b>	community-based participatory research
<b>CCL</b>	Contaminant Candidate List
<b>CCV</b>	continuing calibration verification
<b>CDC</b>	U.S. Centers for Disease Control and Prevention
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CHP</b>	catalyzed hydrogen peroxide
<b>CIC</b>	combustion ion chromatography
<b>CIMS</b>	chemical ionization mass spectrometry
<b>CL</b>	clearance factor
<b>CIPFPECA</b>	chloroperfluoropolyether carboxylate
<b>CMC</b>	critical micelle concentrations
<b>CNT</b>	carbon nanotube
<b>COOH</b>	carboxylic acid functional group
<b>CSF</b>	cancer slope factor
<b>CSM</b>	conceptual site model
<b>CWA</b>	Clean Water Act
<b>Da</b>	Dalton (unit of mass)
<b>DDT</b>	dichlorodiphenyltrichloroethane
<b>DIN EN</b>	Deutsches Institut für Normung, German Institute for Standardization, English
<b>DMSO</b>	dimethyl sulfoxide
<b>DNAPL</b>	dense nonaqueous phase liquid
<b>DOC</b>	dissolved organic carbon
<b>DQO</b>	data quality objective
<b>DW</b>	drinking water
<b>DWR</b>	durable water repellent
<b>EAO</b>	emergency administrative order
<b>EBCT</b>	empty bed contact time
<b>ECCC</b>	Environment and Climate Change Canada
<b>ECF</b>	electrochemical fluorination
<b>ECHA</b>	European Chemicals Agency
<b>ECOS</b>	Environmental Council of the States
<b>ECT</b>	Emerging Compound Treatment Technologies, Inc.
<b>EE/CA</b>	Engineering Evaluation/Cost Analysis
<b>EIS</b>	extraction internal standards
<b>ELG</b>	effluent limitation guidelines
<b>EPC</b>	exposure point concentration
<b>ERA</b>	ecological risk assessment
<b>ERB</b>	equipment rinse blank
<b>ESS</b>	Environmental Sequence Stratigraphy
<b>ESTCP</b>	Environmental Security Technology Certification Program
<b>EtFASA</b>	<i>N</i> -ethyl perfluoroalkane sulfonamide

<b>EtFASE</b>	<i>N</i> -ethyl perfluoroalkane sulfonamido ethanol (var: <i>N</i> -ethyl perfluoroalkane sulfonamide ethanol)
<b>EtFASAA</b>	<i>N</i> -ethyl perfluoroalkane sulfonamido acetic acid (var: <i>N</i> -ethyl perfluoroalkane sulfonamide acetic acid)
<b>ETFE</b>	ethylene tetrafluoroethylene
<b>EtFOSA</b>	<i>N</i> -ethyl perfluorooctane sulfonamide
<b>EtFOSE</b>	<i>N</i> -ethyl perfluorooctane sulfonamido ethanol (var: <i>N</i> -ethyl perfluorooctane sulfonamide ethanol)
<b>EU</b>	European Union
<b>F</b>	fluorine
<b>F-53B</b>	chlorinated polyfluorinated ether sulfonate (PFOS substitute for plating)
<b>F3</b>	fluorine-free foams
<b>FAA</b>	Federal Aviation Administration
<b>FAQ</b>	frequently asked questions
<b>FASA</b>	perfluoroalkane sulfonamide
<b>FASE</b>	perfluoroalkane sulfonamido ethanol (var: perfluoroalkane sulfonamide ethanol)
<b>FASAA</b>	perfluoroalkane sulfonamido acetic acid (var: perfluoroalkane sulfonamide acetic acid)
<b>FCM</b>	food contact materials
<b>FCS</b>	food contact substances
<b>FD</b>	field duplicate
<b>FDA</b>	U.S. Food and Drug Administration
<b>FEC</b>	Foam Exposure Committee
<b>FECA</b>	fluorinated ether carboxylate
<b>FEP</b>	perfluorinated ethylene-propylene
<b>FFFC</b>	Fire Fighting Foam Coalition
<b>FFFP</b>	film-forming fluoroprotein foam
<b>FhxSA</b>	perfluorohexane sulfonamide
<b>f<sub>oc</sub></b>	fraction of organic carbon
<b>FOSA, or PFOSA</b>	perfluorooctane sulfonamide
<b>FOSE</b>	perfluorooctane sulfonamido ethanol (var: perfluorooctane sulfonamide ethanol)
<b>FOSAA</b>	perfluorooctane sulfonamido acetic acid (var: perfluorooctane sulfonamide acetic acid)
<b>FP</b>	fluoroprotein (used in the context of firefighting foam formulations that contain a fluorinated surfactant)
<b>FRB</b>	field reagent blank
<b>FRM</b>	Federal Reference Method
<b>FSANZ</b>	Food Standards Australia and New Zealand
<b>ft4</b>	free thyroxine
<b>FTA</b>	fire training area
<b>FTCA</b>	fluorotelomer carboxylic acid
<b>FT-ICR</b>	Fourier transform ion cyclotron resonance
<b>FTOH</b>	fluorotelomer alcohol
<b>FTSA or FTS</b>	fluorotelomer sulfonate, fluorotelomer sulfonic acid
<b>FtTAoS</b>	fluorotelomer thioether amido sulfonate
<b>FTUCA</b>	fluorotelomer unsaturated carboxylic acid
<b>FWQC</b>	federal water quality goal
<b>GAC</b>	granular activated carbon
<b>GC</b>	gas chromatography
<b>GC/MS</b>	Gas chromatography/mass spectrometry

<b>GEF</b>	Global Environment Facility
<b>GenX</b>	trade name for a polymerization processing aid formulation that contains ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate
<b>GLI</b>	Great Lakes Initiative
<b>GM</b>	geometric mean
<b>GMAV</b>	genus mean acute value
<b>HA</b>	health advisory
<b>HASP</b>	Health and Safety Plan
<b>HDPE</b>	high-density polyethylene
<b>HFPO-DA</b>	hexafluoropropylene oxide dimer acid
<b>HHRA</b>	human health risk assessment
<b>HI</b>	hazard index
<b>HQ</b>	hazard quotient
<b>HRMS</b>	high-resolution mass spectrometry
<b>HRSC</b>	High-resolution site characterization
<b>IARC</b>	International Agency for Research on Cancer
<b>ICAO</b>	International Civil Aviation Organization
<b>ICV</b>	initial calibration verification
<b>IDA</b>	isotope dilution analysis
<b>IDW</b>	investigation-derived waste
<b>IPEN</b>	International Pollutants Elimination Network
<b>IRIS</b>	Integrated Risk Information System
<b>ITRC</b>	Interstate Technology and Regulatory Council
<b>IX</b>	ion exchange
<b>K<sub>d</sub></b>	bulk partitioning coefficient
<b>K<sub>oc</sub></b>	organic carbon partitioning coefficient
<b>K<sub>ow</sub></b>	water/octanol coefficient
<b>LC</b>	liquid chromatography
<b>LC/MS/MS</b>	liquid chromatography/mass spectrometry/mass spectrometry
<b>LCS</b>	lab control sample
<b>LCPFAC</b>	long-chain perfluoroalkyl carboxylate
<b>LDPE</b>	low-density polyethylene
<b>LEAF</b>	Leaching Environmental Assessment Framework
<b>LHA</b>	lifetime health advisory
<b>LHWA</b>	Little Hocking Water Association
<b>LNAPL</b>	light nonaqueous phase liquid
<b>LOAEL</b>	lowest observed adverse effect level
<b>LOEC</b>	lowest observed effect concentration
<b>LOQ</b>	limit of quantitation
<b>MA DEP</b>	Massachusetts Department of Environmental Protection
<b>MAC-QS</b>	maximum acceptable quality standards
<b>MALDI-TOF</b>	matrix-assisted laser desorption/ionization time-of-flight
<b>MCL</b>	Maximum Contaminant Level
<b>MDH</b>	Minnesota Department of Health
<b>MeFASA</b>	<i>N</i> -methyl perfluoroalkane sulfonamide
<b>MeFASE</b>	<i>N</i> -methyl perfluoroalkane sulfonamido ethanol (var: <i>N</i> -methyl perfluoroalkane sulfonamide ethanol)

<b>MeFASAA</b>	<i>N</i> -methyl perfluoroalkane sulfonamido acetic acid (var: <i>N</i> -methyl perfluoroalkane sulfonamide acetic acid)
<b>MeFOSA</b>	<i>N</i> -methyl perfluorooctane sulfonamide
<b>MEP</b>	Multiple Extraction Procedure
<b>ML</b>	method limit
<b>MNA</b>	monitored natural attenuation
<b>MOA</b>	mode of action
<b>MPCA</b>	Minnesota Pollution Control Agency
<b>MRL</b>	minimal risk level, or minimum reporting limit (laboratory analytical)
<b>MRM</b>	multiple reaction monitoring
<b>MS</b>	mass spectrometry
<b>MSD</b>	matrix spike duplicate
<b>MSW</b>	municipal solid waste
<b>MWCO</b>	molecular weight cut-off
<b>NAM</b>	new assessment method
<b>NaPFO</b>	sodium perfluorooctanoate
<b>NAPL</b>	nonaqueous phase liquid
<b>NCOD</b>	National Contaminant Occurrence Database
<b>NER</b>	non-extractable residues
<b>NESHAP</b>	National Emissions Standards for Hazardous Air Pollutants
<b>N-EtFOSA</b>	<i>N</i> -ethyl perfluorooctane sulfonamide
<b>NF</b>	nanofiltration
<b>NFPA</b>	National Fire Protection Association
<b>NGWA</b>	National Groundwater Association
<b>NHANES</b>	National Health and Nutrition Examination Survey
<b>NHDES</b>	New Hampshire Department of Environmental Services
<b>NJ DEP</b>	New Jersey Department of Environmental Protection
<b>NJDWQI</b>	New Jersey Drinking Water Quality Institute
<b>NMeFOSAA</b>	<i>N</i> -Methylperfluorooctane sulfonamidoacetic acid
<b>NOAEL</b>	no observed adverse effect level
<b>NOEC</b>	no observed effect concentration
<b>NOM</b>	natural organic matter
<b>NOx</b>	nitrogen oxides
<b>NPCA</b>	Norwegian Pollution Control Agency
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NPDWRs</b>	National Primary Drinking Water Regulations
<b>NPL</b>	National Priorities List
<b>NSF</b>	National Sanitation Foundation
<b>NTP</b>	National Toxicology Program
<b>NWQC</b>	national water quality criteria
<b>NYDEC</b>	New York State Department of Environmental Conservation
<b>O&amp;M</b>	operation and maintenance
<b>OAT</b>	organic anion transporter protein
<b>OC</b>	organic carbon
<b>OCPSF</b>	organic chemicals, plastics and synthetic fibers
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OEHHA</b>	Office of Environmental Health Hazard Assessment (California)
<b>OH</b>	hydroxide ion, or hydroxyl group ( <a href="#">Helmenstine 2018</a> )

<b>OPEX</b>	operating expenses
<b>ORD</b>	Office of Research and Development (USEPA)
<b>OSB</b>	oriented strand board
<b>OU</b>	operable unit
<b>PAB</b>	permeable absorptive barrier
<b>PA DEP</b>	Pennsylvania Department of Environmental Protection
<b>PAC</b>	powdered activated carbon
<b>PAF</b>	perfluoroalkanoyl fluorides
<b>PAH</b>	polycyclic aromatic hydrocarbon
<b>PASF</b>	perfluoroalkane sulfonyl fluoride
<b>PBSF</b>	perfluorobutane sulfonyl fluoride
<b>PBT</b>	persistent, bioaccumulative, and toxic
<b>PCA</b>	principal components analysis
<b>PCBs</b>	polychlorinated biphenyls
<b>PCE</b>	perchloroethylene
<b>PE</b>	performance evaluation
<b>PFA</b>	perfluoroalkoxy polymer
<b>PFAA</b>	perfluoroalkyl acid
<b>PFAI</b>	perfluoroalkyl iodides
<b>PFAS</b>	per- and polyfluoroalkyl substances
<b>PFBA</b>	perfluorobutanoate, perfluorobutanoic acid, perfluorobutyrate, perfluorobutyric acid
<b>PFBE</b>	perfluorobutyl ethylene
<b>PFBS</b>	perfluorobutane sulfonate, perfluorobutane sulfonic acid
<b>PFC</b>	perfluorocarbon ( $C_nF_{2n+1}$ , for example, perfluorooctane) <i>Do not use this acronym for any other description including perfluorinated compound or perfluorochemical.</i>
<b>PFCA</b>	perfluoroalkyl carboxylate, perfluoroalkyl carboxylic acid
<b>PFDA</b>	perfluorodecanoate, perfluorodecanoic acid
<b>PFDoA, or PFDoDA</b>	perfluorododecanoate, perfluorododecanoic acid
<b>PFDoS, or PFDoDS</b>	perfluorododecane sulfonate, perfluorododecane sulfonic acid
<b>PFDS</b>	perfluorodecane sulfonate, perfluorodecane sulfonic acid
<b>PFECA</b>	per- or polyfluoroalkyl ether carboxylic acid
<b>PFEI</b>	perfluoroethyl iodide (aka fluorotelomer iodide)
<b>PFESA</b>	per- or poly- fluoroalkyl ether sulfonic acid
<b>PFHpA</b>	perfluoroheptanoate, perfluoroheptanoic acid
<b>PFHpS</b>	perfluoroheptane sulfonate, perfluoroheptane sulfonic acid
<b>PFHxA</b>	perfluorohexanoate, perfluorohexanoic acid
<b>PFHxS</b>	perfluorohexane sulfonate, perfluorohexane sulfonic acid
<b>PFIB</b>	perfluoroisobutylene
<b>PFMOAA</b>	perfluoro-2-methoxyacetic acid
<b>PFNA</b>	perfluorononanoate, perfluorononanoic acid
<b>PFNS</b>	perfluorononane sulfonate, perfluorononane sulfonic acid
<b>PFOA</b>	perfluorooctanoate, perfluorooctanoic acid, perfluorooctane carboxylate
<b>PFOS</b>	perfluorooctane sulfonate, perfluorooctane sulfonic acid
<b>PFOSA, or FOSA</b>	perfluorooctane sulfonamide
<b>PFPA</b>	perfluorophosphonic acid
<b>PFPE</b>	perfluoropolyether
<b>PFPeA</b>	perfluoropentanoate, perfluoropentanoic acid

<b>PFPeS</b>	perfluoropentane sulfonate, perfluoropentane sulfonic acid
<b>PFPiA</b>	perfluorophosphinic acid
<b>PFSA</b>	perfluoroalkyl sulfonate, perfluoroalkane sulfonic acid
<b>PFSiA</b>	perfluoroalkyl sulfinic acid
<b>PFTeDA, or PFTA</b>	perfluorotetradecanoic acid
<b>PFTeDS, or PFTS</b>	perfluorotetradecane sulfonate, perfluorotetradecane sulfonic acid
<b>PFTrDA, or PFTriA</b>	perfluorotridecanoic acid
<b>PFTrDS, or PFTriS</b>	perfluorotridecane sulfonate, perfluorotridecane sulfonic acid
<b>PFUnA, or PFUnDA</b>	perfluoroundecanoate, perfluoroundecanoic acid
<b>PFUnS, or PFUnDS</b>	perfluoroundecane sulfonate, perfluoroundecane sulfonic acid
<b>pg/m<sup>3</sup></b>	picogram per cubic meter
<b>pH</b>	negative log of hydrogen ion concentration (measure of acidity)
<b>PHxSF</b>	perfluorohexane sulfonyl fluoride
<b>PICs</b>	products of incomplete combustion
<b>PIGE</b>	partice-induced gamma-ray emission spectroscopy
<b>PIH</b>	pregnancy-induced hypertension
<b>PILI</b>	polymer with ionic liquid coated iron
<b>PNEC</b>	predicted no-effect concentration
<b>POD</b>	porewater observation device
<b>POE</b>	point of exposure
<b>POET</b>	point of entry treatment
<b>polyDADMAC</b>	Polydiallyldimethylammonium chloride
<b>POP</b>	persistent organic pollutant
<b>POPRC-14</b>	14th meeting of the POPs Review Committee
<b>POSF</b>	perfluorooctane sulfonyl fluoride
<b>POU</b>	point of use
<b>PPAR-<math>\alpha</math></b>	peroxisome proliferator-activated receptor- $\alpha$
<b>ppb</b>	parts per billion
<b>PPE</b>	personal protective equipment
<b>ppm</b>	parts per million
<b>ppt</b>	parts per trillion
<b>PPRTV</b>	Provisional Peer-Reviewed Toxicity Values
<b>PSA</b>	prostate-specific antigen
<b>PSD</b>	passive sampling device
<b>PTFE</b>	polytetrafluoroethylene
<b>PUF</b>	polyurethane foam
<b>PVDF</b>	polyvinylidene fluoride
<b>PWS</b>	public water system
<b>QA</b>	quality assurance
<b>QAPP</b>	quality assurance project plan
<b>QC</b>	quality control
<b>QL</b>	quantitation limit
<b>QPD</b>	qualified products database
<b>QPL</b>	Qualified Product Listing
<b>QSAR</b>	quantitative structure-activity relationship
<b>QSM</b>	Quality Systems Manual
<b>qTOF/MS</b>	quadrupole time of flight-mass spectrometry
<b>RAO</b>	remedial action objective

<b>RCRA</b>	Resource Conservation and Recovery Act
<b>REACH</b>	European Chemicals Regulation
<b>RfD</b>	reference dose
<b>RI/FS</b>	Remedial Investigation/Feasibility Study
<b>RIVM</b>	Netherlands National Institute for Public Health and the Environment
<b>RL</b>	reporting limit
<b>RML</b>	removal management level
<b>RO</b>	reverse osmosis
<b>RPD</b>	relative percent difference
<b>RPF</b>	relative potency factor
<b>RSC</b>	relative source contribution
<b>RSL</b>	regional screening level (Note: In many commercial venues RSL means “restricted substances list.”)
<b>RSSCT</b>	rapid small-scale column testing
<b>SAP</b>	Sampling and Analysis Plan
<b>SCWO</b>	supercritical water oxidation
<b>s.d. or SD</b>	standard deviation
<b>SDS</b>	Safety Data Sheet
<b>SDWA</b>	Safe Drinking Water Act
<b>SERDP</b>	Strategic Environmental Research and Development Program
<b>SIP</b>	sorbent-impregnated polyurethane foam
<b>SL</b>	screening level
<b>SMART</b>	specific, measurable, attainable, relevant, and timely (goal)
<b>SMAV</b>	species mean acute value
<b>SML</b>	surface micro layer
<b>SMZ</b>	surface-modified zeolites
<b>SNUR</b>	Significant New Use Rule
<b>SPE</b>	solid-phase extraction
<b>SPLP</b>	Synthetic Precipitation Leaching Procedure
<b>SSD</b>	species sensitivity distribution
<b>STAR</b>	Spill Tactics for Alaska Responders
<b>TANA</b>	Technical Assistance Needs Assessments
<b>TARC</b>	top-layer antireflective coatings
<b>TBC</b>	to-be-considered values
<b>TBEL</b>	technology-based effluent limits
<b>TCE</b>	trichloroethene
<b>TCEQ</b>	Texas Commission for Environmental Quality
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TDS</b>	total dissolved solids
<b>TEQ</b>	toxic equivalency quotient
<b>TFE</b>	tetrafluoroethylene
<b>TMDL</b>	total maximum daily loads
<b>TMF</b>	trophic magnification factor
<b>TO</b>	Toxic Organic (method)
<b>TOC</b>	total organic carbon
<b>TOF</b>	time-of-flight
<b>TOP</b>	total oxidizable precursor
<b>TRRP</b>	Texas Risk Reduction Program



<b>TRV</b>	toxicity reference value
<b>TSH</b>	Thyroid-stimulating hormones
<b>TSCA</b>	Toxic Substances Control Act
<b>TTDs</b>	target organ toxicity doses
<b>UCMR</b>	Unregulated Contaminant Monitoring Rule
<b>UF</b>	ultrafiltration
<b>mg/kg</b>	micrograms per kilogram
<b>UL</b>	Underwriters Laboratories
<b>U.S.C.</b>	United States Code
<b>USDOD</b>	United States Department of Defense
<b>USDW</b>	Underground sources of drinking water
<b>USEPA</b>	United States Environmental Protection Agency
<b>USGS</b>	United States Geological Survey
<b>VDEC</b>	Vermont Department of Environmental Conservation
<b>VDH</b>	Vermont Department of Health
<b>VOC</b>	volatile organic compound
<b>WQBEL</b>	water quality-based effluent limits
<b>WV</b>	wildlife value
<b>ww</b>	wet weight
<b>WWTP</b>	wastewater treatment plant
<b>ZVI</b>	zero-valent iron

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