## Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) - Biomonitoring California Laboratory Capability, August 2018

| Sub-Group of PFASs                   | Measured <sup>a</sup><br>in serum | Lab analyte<br>abbreviation | Name of lab standard                               | Name on designated chemical list <sup>b</sup> |
|--------------------------------------|-----------------------------------|-----------------------------|--|---|
| Perfluoroalkyl carboxylates          | ✓                                 | PFBA                        | Perfluoro-n-butanoic acid                          | Perfluorobutanoic acid                        |
|                                      | <b>√</b>                          | PFPeA                       | Perfluoro-n-pentanoic acid                         | Perfluoropentanoic acid                       |
|                                      | ✓                                 | PFHxA                       | Perfluoro-n-hexanoic acid                          | Perfluorohexanoic acid                        |
|                                      | √c                                | PFHpA                       | Perfluoro-n-heptanoic acid                         | Perfluoroheptanoic acid                       |
|                                      | √c                                | PFOA                        | Perfluoro-n-octanoic acid                          | Perfluorooctanoic acid                        |
|                                      | √c                                | PFNA                        | Perfluoro-n-nonanoic acid                          | Perfluorononanoic acid                        |
|                                      | √c                                | PFDA                        | Perfluoro-n-decanoic acid                          | Perfluorodecanoic acid                        |
|                                      | √c                                | PFUdA                       | Perfluoro-n-undecanoic acid                        | Perfluoroundecanoic acid                      |
|                                      | √c                                | PFDoA                       | Perfluoro-n-dodecanoic acid                        | Perfluorododecanoic acid                      |
|                                      | d                                 | PFTrDA                      | Perfluoro-n-tridecanoic acid                       | Perfluorotridecanoic acid                     |
|                                      |                                   | PFTeDA                      | Perfluoro-n-tetradecanoic acid                     | Perfluorotetradecanoic acid                   |
| Perfluoroalkyl sulfonates            | √c                                | PFBS                        | Potassium perfluoro-1-<br>butanesuolfonate, linear | Perfluorobutane sulfonic acid                 |
|                                      | √c                                | PFHxS                       | Sodium perfluoro-1-hexanesulfonate, linear         | Perfluorohexane sulfonic acid                 |
|                                      | √c                                | PFOS                        | Sodium perfluoro-1-octanesulfonate, linear         | Perfluorooctane sulfonic acid                 |
|                                      | <b>√</b>                          | PFDS                        | Sodium perfluoro-1-decanesulfonate, linear         | Perfluorodecane sulfonic acid                 |
| Telomer acids (FTAs)                 | ✓                                 | FPePA                       | 3-Perfluoropentyl propanoic acid                   | Not named individually                        |
|                                      | ✓                                 | FHpPA                       | 3-Perfluoroheptyl propanoic acid                   | Not named individually                        |
|                                      | ✓                                 | FHEA                        | 2-Perfluorohexyl ethanoic acid                     | Not named individually                        |
|                                      | ✓                                 | FOEA                        | 2-Perfluorooctyl ethanoic acid                     | Not named individually                        |
| Unsaturated telomer acids<br>(FTUAs) | ✓                                 | FHUEA                       | 2H-Perfluoro-2-octenoic acid                       | Not named individually                        |
|                                      | <b>✓</b>                          | FOUEA                       | 2H-Perfluoro-2-decenoic acid                       | Not named individually                        |

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|--|-----------------------------------|--------------------------|---|--|
| Fluorotelomer sulfonates                           | <b>√</b>                          | 4:2 FTS                  | Sodium 1H,1H,2H,2H-<br>perfluorohexane sulfonate                            | 4:2 Fluorotelomer sulfonic acid                      |
|  | ✓                                 | 6:2 FTS                  | Sodium 1H,1H,2H,2H-<br>perfluorooctane sulfonate                            | 6:2 Fluorotelomer sulfonic acid                      |
|  | <b>✓</b>                          | 8:2 FTS                  | Sodium 1H,1H,2H,2H-<br>perfluorodecane sulfonate                            | 8:2 Fluorotelomer sulfonic acid                      |
| Polyfluorinated phosphate<br>esters                |                                   | 6:2 PAP                  | Sodium 1H,1H,2H,2H-<br>perfluoroctylphosphate                               | 6:2 Fluorotelomer phosphate monoester                |
|  | ✓                                 | 8:2 PAP                  | Sodium 1H,1H,2H,2H-<br>perfluorodecylphosphate                              | Not named individually                               |
|  | <b>√</b>                          | 6:2 diPAP                | Sodium bis (1H,1H,2H,2H-<br>perfluorooctyl) phosphate                       | 6:2 Fluorotelomer phosphate diester                  |
|  | ✓                                 | 8:2 diPAP                | Sodium bis (1H,1H,2H,2H-<br>perfluorodecyl) phosphate                       | 8:2 Fluorotelomer phosphate diester                  |
|  |                                   | SAmPAP                   | Sodium 2-(N-ethylperfluorooctane-1-sulfonamido)ethyl phosphate              | Not named individually                               |
|  |                                   | diSAmPAP                 | Sodium bis-[2-N-<br>ethylperfluorooctane-1-<br>sulfonamido)ethyl] phosphate | Not named individually                               |
| N-Alkylperfluorooctane-<br>sulfonamidoacetic acids | √c                                | PFOSA                    | Perfluoro-1-octanesulfonamide   | Perfluorooctane sulfonamide                          |
|  | √c                                | EtFOSAA                  | N-Ethylperfluoro-1-<br>octanesulfonamidoacetic acid                         | 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid  |
|  | √c                                | MeFOSAA                  | N-Methylperfluoro-1-<br>octanesulfonamidoacetic acid                        | 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid |
| Perfluoroalkylphosphinates                         | <b>✓</b>                          | 6:6 PFPi                 | Sodium bis(perfluorohexyl)phosphinate                                       | Bis(perfluorohexyl)phosphinic acid                   |
|  | <b>√</b>                          | 6:8 PFPi                 | Sodium perfluorohexylperfluorooctyl-phosphinate                             | Perfluorohexylperfluorooctyl phosphinic acid         |
|  |                                   | 8:8 PFPi                 | Sodium bis(perfluorooctyl)phosphinate                                       | Not named individually                               |
| Perfluoroalkylphosphonic acids                     | ✓                                 | PFHxPA                   | Perfluorohexylphosphonic acid   | Perfluorohexylphosphonic acid                        |
|  | ✓                                 | PFOPA                    | Perfluorooctylphosponic acid  | Perfluorooctylphosponic acid                         |

a. Measured by the Environmental Chemistry Laboratory in the Department of Toxic Substances Control.

b. The entire class of PFASs is a "designated chemical" (as well as a "priority chemical"), but not all analytes are named individually on the list.

c. Included in the smaller panel of twelve PFASs, which are being measured in the California Regional Exposure (CARE) Study.

d. "--" means that this PFAS is included as a lab reference only, and not finalized as a reportable result.