Concentrations (ng/L) of hydroxy-polycyclic aromatic hydrocarbons (hydroxy-PAHs) (metabolites of PAHs) in urine samples collected from 101 firefighters in 2010 - 2011 for the Firefighter Occupational Exposures (FOX) Project

Hydroxy-PAH[a, b]	Geometric Mean (95% Confidence Interval)	Selected Percentiles				Detection Frequency	Limit of Detection (LOD)
		25th	50th	75th	95th		
2-FLUO	**172** (149 – 198)	98.4	185	297	510	100%	20.0
3-FLUO	**83.5** (70.6 – 98.9)	44.8	85.8	148	365	96.0%	20.0
9-FLUO	**278** (236 – 328)	162	279	453	1110	100%	37.0
1-NAP	**1290** (1030 – 1610)	613	1300	2210	8270	100%	25.0
2-NAP	**3190** (2690 – 3770)	2000	3060	4830	11300	100%	20.0
1-PHEN	**120** (103 – 138)	75.0	119	196	455	100%	10.0
2-PHEN	**67.1** (59.5 – 75.7)	41.1	64.8	97.9	204	100%	10.0
3-PHEN	**88.4** (75.7 – 103)	51.2	94.1	140	367	100%	10.0
1-PYR	**87.2** (72.8 – 105)	50.2	84.2	141	457	95.1%	20.0

a. See page two for full names of hydroxy-PAHs.
b. See page three for explanation of terms.

Abbreviations, full chemical names, and Chemical Abstracts Service Registry Numbers (CASRNs) and parent polycyclic aromatic hydrocarbons (PAHs) for analytes measured

Abbreviation	Full Name of Analyte	CASRN[a]	Parent PAH
2-FLUO	2-Hydroxyfluorene	2443-58-5	Fluorene
3-FLUO	3-Hydroxyfluorene	6344-67-8	Fluorene
9-FLUO	9-Hydroxyfluorene	1689-64-1	Fluorene
1-NAP	1-Hydroxynaphthalene	90-15-3	Naphthalene
2-NAP	2-Hydroxynaphthalene	135-19-3	Naphthalene
1-PHEN	1-Hydroxyphenanthrene	2433-56-9	Phenanthrene
2-PHEN	2-Hydroxyphenanthrene	605-55-0	Phenanthrene
3-PHEN	3-Hydroxyphenanthrene	605-87-8	Phenanthrene
1-PYR	1-Hydroxypyrene	5315-79-7	Pyrene

a. See page three for explanation of CASRN.

Explanation of Terms

µg/L	Micrograms of the chemical per liter of urine.
Metabolite	Metabolites are formed when chemicals, such as environmental contaminants or drugs, are broken down or changed through natural processes in the body. Metabolites are measured in biomonitoring studies as indicators of exposure to certain chemicals.
Geometric mean	The geometric mean is an estimated middle value of a set of numbers. This is different than the average, also called the "arithmetic mean." A geometric mean is sometimes calculated when the set of numbers contains some extreme values. For example, the geometric mean of the set of numbers "1, 2, 2, 3, 4, 5, 5, 6, 10, 100" is calculated by *multiplying* all ten numbers together and then *raising the product to the 1/10th power*, giving 4.8. To compare, the arithmetic mean is calculated by *adding* all ten numbers and *dividing by 10*, giving 14.
95% confidence interval	A *sample* is a subset of a larger *population*. A confidence interval for a statistical measure is a range of values estimated from *sample* data. This interval is likely to include the true value of the statistical measure, such as a geometric mean, for the larger *population*. A 95% confidence interval for a statistical measure implies that we are 95% confident that the range includes the true *population* value for this measure.
Percentiles	Percentiles are best explained by an example: if the 75th percentile is 1.5 µg/L, this means that 75% of participants had levels less than or equal to 1.5 µg/L.
Detection frequency (percent detected)	The percentage of study participants with a measurable level of a chemical in their blood or urine.
Limit of detection (LOD)	The LOD is the lowest level of a chemical that the laboratory can measure in blood or urine.
CASRN - Chemical Abstracts Service Registry Number	The CASRN is a unique identification number assigned to individual chemicals by the Chemical Abstracts Service division of the American Chemical Society.