

August 2020 addendum to the Draft Recommended State Action Levels for Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Approach, Methods and Supporting Information (November 2019)

RE: Change to PFBS SAL

In response to comments on our draft SALs, we reconsidered the calculation for the PFBS SAL. Specifically, we revised it to include infant intake of drinking water.

The reference dose for PFBS was based on developmental toxicity in rodents. In our initial draft SAL, we assumed 95th percentile drinking water intake for lactating women, which is slightly higher than the intake for pregnant women (and therefore protective of pregnant women). Maternal PFBS intake determines the amount of PFBS available to the fetus and breastfed child.

$$0.00030 \text{ mg/kg-day (RfD)} \times 0.2 \text{ (RSC)} / 0.047 \text{ L/kg-day} = 0.00128 \text{ mg/L, rounded to } 1.3 \text{ } \mu\text{g/L}$$

In the revised SAL, we considered all early childhood life stages to better protect infants whose infant-formula is mixed with tap water and young children who have a higher intake of drinking water per kilogram of body weight than adults. These are shown in the table below.

Life stage	Drinking water Intake rate (L/kg-day) ^a	Relative Source contribution or RSC (%)	(RfD ^b /DW intake)*RSC=SAL (mg/L)
Infants (<1 year)	0.174 (95 th)	50	0.000862
1 to <2 years old	0.049 (90 th)	20	0.001224
2 to <3 years old	0.051 (90 th)	20	0.001176
3 to <6 years old	0.039 (90 th)	20	0.001538
Pregnant women	0.038 (95 th)	20	0.001579
Lactating women	0.047 (95 th)	20	0.001276

^a Intake rates from 2019 EPA Exposure Factors Handbook Chapter 3

^b RfD = Reference Dose which is 0.0003 mg/kg-day for PFBS

Consistent with assumptions for other PFAS SALs we used 95th percentile drinking water intake rates for infants, pregnant women and lactating women and 90th percentile drinking water rates for all chronic periods. The RSC of 50 percent for infants is also consistent with our other PFAS SALs (see Table 2 in the WDOH, Draft Recommended State Action Levels for PFAS in Drinking Water: Approach, Methods, and Supporting Information, November 2019).

Our new draft SAL for PFBS is 0.860 µg/L (or 860 ppt).

$$0.00030 \text{ mg-kg-day} \times 0.5 / 0.174 \text{ L/kg-day} = 0.000862 \text{ mg/L, rounded to } 0.860 \text{ } \mu\text{g/L}$$