

Table 1. Concentrations (ng/g lipid weight) of PBDEs, other BFRs, DPs, m-PFRs, and o-PFRs in chicken and fish samples collected from an e-waste processing area in Bui Dau, northern Vietnam.

| | Chicken | | | | | | | | | | | | Pond fish | | | River fish | | |
|---|------------------|--------|-------|----------------|--------|------|---------------|--------|-------|--------------|--------|------|----------------|--------|-------|-----------------|--------|------|
| | Egg york (n = 5) | | | Muscle (n = 5) | | | Liver (n = 5) | | | Skin (n = 5) | | | Muscle (n = 5) | | | Muscle (n = 15) | | |
| | Min. | Median | Max. | Min. | Median | Max. | Min. | Median | Max. | Min. | Median | Max. | Min. | Median | Max. | Min. | Median | Max. |
| Polybrominated diphenyl ethers (PBDEs) | | | | | | | | | | | | | | | | | | |
| BDE-28 | <0.38 | <0.38 | <0.38 | <3.0 | <3.0 | <3.0 | <1.5 | <1.5 | <1.5 | <0.38 | <0.38 | 1.0 | 0.25 | 0.64 | 4.8 | 0.68 | 13 | 59 |
| BDE-47 | <0.38 | 1.0 | 5.0 | <3.0 | 5.9 | 350 | <1.5 | 4.0 | 140 | 1.0 | 3.0 | 440 | 2.2 | 3.8 | 18 | 7.9 | 71 | 370 |
| BDE-49 | <0.38 | <0.38 | 1.0 | <3.0 | <3.0 | 64 | <1.5 | <1.5 | 21 | <0.38 | <0.38 | 82 | 0.95 | 1.2 | 4.6 | 1.3 | 17 | 77 |
| BDE-99 | 1.0 | 3.0 | 6.0 | <3.0 | 8.1 | 520 | <1.5 | 3.0 | 180 | <0.38 | 5.0 | 570 | <0.26 | <0.26 | 0.52 | 0.52 | 5.4 | 79 |
| BDE-100 | <0.38 | 1.0 | 2.0 | <3.0 | <3.0 | 45 | <1.5 | 3.0 | 31 | <0.38 | 1.0 | 50 | <0.20 | 0.42 | 1.7 | 1.2 | 8.4 | 41 |
| BDE-153 | 1.0 | 5.0 | 25 | <6.0 | 15 | 180 | <3.0 | 16 | 110 | <0.75 | 19 | 170 | <0.23 | <0.23 | <0.23 | 2.6 | 15 | 110 |
| BDE-154 | <0.75 | 1.0 | 2.0 | <6.0 | <6.0 | 42 | <3.0 | <3.0 | 17 | <0.75 | 2.0 | 41 | 1.0 | 1.9 | 7.3 | 7.8 | 54 | 410 |
| BDE-183 | 2.0 | 8.0 | 32 | <6.0 | 6.8 | 81 | <3.0 | 6.0 | 120 | <0.75 | 6.0 | 81 | <0.65 | <0.65 | <0.65 | <0.65 | 2.0 | 75 |
| BDE-196 | 1.0 | 20 | 52 | <6.0 | 13 | 33 | <3.0 | 22 | 46 | <0.75 | 15 | 38 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | 7.9 |
| BDE-197 | 1.0 | 7.0 | 17 | <6.0 | <6.0 | 31 | <3.0 | 7.0 | 41 | <0.75 | 7.0 | 30 | <1.8 | <1.8 | <1.8 | <1.8 | <1.8 | 18 |
| BDE-206 | 4.0 | 160 | 700 | <15 | 45 | 66 | <7.5 | 84 | 360 | <1.9 | 49 | 100 | <3.9 | <3.9 | <3.9 | <3.9 | <3.9 | 56 |
| BDE-207 | 3.0 | 120 | 410 | <15 | 100 | 230 | <7.5 | 160 | 390 | <1.9 | 91 | 170 | <4.0 | <4.0 | <4.0 | <4.0 | <4.0 | 25 |
| BDE-209 | 39 | 1500 | 7400 | 62 | 1800 | 3100 | 10 | 2300 | 13000 | 8.0 | 1000 | 1400 | <6.5 | <6.5 | <6.5 | 8.4 | 73 | 1400 |
| Σ13PBDEs | 53 | 1900 | 8600 | 62 | 2500 | 3500 | 10 | 3400 | 14000 | 9.0 | 1700 | 2800 | <6.5 | 7.8 | 36 | 43 | 250 | 2300 |
| Other brominated flame retardants (Other BFRs) | | | | | | | | | | | | | | | | | | |
| TBBPA | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <15 | <15 | 310 | <15 | 19 | 190 |
| PBBZ | 0.19 | 0.96 | 1.9 | <1.5 | <1.5 | <1.5 | <0.36 | <0.36 | 3.7 | <0.5 | <0.5 | 2.0 | <1.4 | <1.4 | <1.4 | <1.4 | <1.4 | <1.4 |
| HBB | <1 | 1.1 | 2.1 | <1.5 | <1.5 | 10 | <0.36 | <0.36 | 11 | <0.3 | 0.49 | 5.8 | <1.8 | 2.2 | 4.1 | <1.8 | 2.2 | 5.3 |
| BEH-TEBP | <1.3 | <1.3 | 2.0 | <6.5 | <6.5 | <6.5 | <1.5 | <1.5 | <1.5 | <1.3 | <1.3 | <1.3 | <33 | <33 | <33 | <33 | <33 | <33 |
| BTBPE | <2.8 | 18 | 160 | <3.1 | 46 | 100 | <0.7 | 12 | 130 | <0.62 | 25 | 100 | <7.5 | <7.5 | <7.5 | <7.5 | <7.5 | <7.5 |
| DBDPE | <2.5 | <2.5 | 62 | <7.5 | <7.5 | <7.5 | <3.0 | <3.0 | <3.0 | <2.8 | <2.8 | <2.8 | <34 | <34 | <34 | <34 | 37 | 2600 |
| Other BFRs | <7.0 | 22 | 230 | <40 | 46 | 100 | <20 | <20 | 130 | <7.0 | 33 | 100 | <34 | <34 | 310 | <34 | 96 | 2800 |
| Dechlorane plus isomers (DPs) | | | | | | | | | | | | | | | | | | |
| syn-DP | 3.4 | 390 | 560 | <1.6 | 7.6 | 1400 | <0.36 | 6.8 | 8100 | <0.32 | 0.38 | 790 | <0.19 | 0.38 | 10 | 2.2 | 130 | 430 |
| anti-DP | 9.1 | 950 | 1800 | <1.6 | 26 | 1600 | 7.5 | 21 | 17000 | <0.32 | 1.6 | 3000 | <0.19 | 0.31 | 14 | 2.4 | 140 | 520 |
| DPs | 13 | 1300 | 2400 | <1.6 | 34 | 3000 | 7.5 | 28 | 25000 | <0.32 | 2.0 | 3800 | <0.19 | 0.67 | 24 | 4.6 | 270 | 880 |
| Monomeric organophosphorus flame retardants (m-PFRs) | | | | | | | | | | | | | | | | | | |
| TCEP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | 29 | 54 | 85 | <15 | 46 | 160 |
| TCIPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | 68 | 170 | 290 | 63 | 130 | 300 |
| TDCIPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <10 | 21 | 40 | 12 | 27 | 79 |
| TPHP | <7.0 | 240 | 560 | 350 | 1900 | 3600 | 60 | 280 | 330 | <7.0 | 100 | 680 | 9.2 | 28 | 94 | 43 | 92 | 230 |
| MPDPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | 6.1 | 12 | 31 | 11 | 24 | 68 |
| EHDPP | <7.0 | <7.0 | <7.0 | <40 | <40 | 62 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | <5.0 | 12 | <5.0 | <5.0 | 11 |
| TMPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | 12 | 61 | 11 | 37 | 94 |
| TDMPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 7.9 |
| m-PFRs | <7.0 | 240 | 560 | 410 | 1900 | 3600 | 60 | 280 | 330 | <7.0 | 100 | 680 | 140 | 300 | 570 | 180 | 400 | 720 |
| Oligomeric organophosphorus flame retardants (o-PFRs) | | | | | | | | | | | | | | | | | | |
| PBDPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | 8.0 | 9.5 | <5.0 | 6.1 | 8.2 |
| BPA-BDPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | <5.0 | 5.3 | <5.0 | <5.0 | 10 |
| PBDMPP | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | 9.3 |
| o-PFRs | <7.0 | <7.0 | <7.0 | <40 | <40 | <40 | <20 | <20 | <20 | <7.0 | <7.0 | <7.0 | <5.0 | 8.0 | 15 | <5.0 | 6.8 | 18 |