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Residue and Ecological Risk Assessment of Polybrominated Diphenyl Ethers (PBDEs) in Sediment from CauBay River, Vietnam

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Abstract : This research presents the first comprehensive survey of congener profiles (7 indicator congeners) of polybrominated diphenyl ethers (PBDEs) in sediment samples covering ten sites in CauBay River, Vietnam. Chemical analyses were carried out in gas chromatography–mass spectrometry (GC–MS) for tri- to hepta- brominated congeners. Results pointed out a non-homogenous contamination of the sediment with ∑7 PBDE values ranging from 8.93 to 25.64ng g−1, reflecting moderate to low contamination closely in conformity to other Asian aquatic environments. The general order of decreasing congener contribution to the total load was: BDE 47 > 99 > 100 > 154, similar to the distribution pattern worldwide. PBDEs had rare risks in the sediment of studied area. However, due to the propensity of PBDEs to accumulate in various compartments of wildlife and human food webs, evaluation of biological tissues should be undertaken as a high priority.

Keywords : residue, risk assessment, PBDEs, sediment
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