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Unintentional production of persistent chlorinated and brominated organic pollutants during iron ore sintering processes

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Highlights:

- PBDD/F emission factors were derived for six iron ore sintering plants in China
- These emission factors are important for compiling the global emission inventory
- Significant correlations among POPs suggest the possibility of synergetic reduction
- PCDD/Fs were dominant contributors to total toxic equivalents of multiple POPs

Abstract

Iron ore sintering (SNT) processes are major sources of unintentionally produced chlorinated persistent organic pollutants (POPs), including polychlorinated dibenzo-*p*-dioxins/dibenzofurans (PCDD/Fs), polychlorinated biphenyls (PCBs), and polychlorinated naphthalenes (PCNs). However, few studies of emissions of brominated POPs, such as polybrominated dibenzo-*p*-dioxins/dibenzofurans (PBDD/Fs) and polybrominated diphenyl ethers (PBDEs), during SNT have been performed. Stack gas