Supporting Information

Effects of Desulfurization Processes on Polybrominated Dibenzo-p-dioxin and

Dibenzofuran Emissions from Iron Ore Sintering

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Table S1. Toxic equivalence factors for several polybrominated dibenzo-p-dioxinsanddibenzofurans(PBDD/Fs)normalizedtothevaluefor2,3,7,8-tetrachlorodibenzo-p-dioxin.

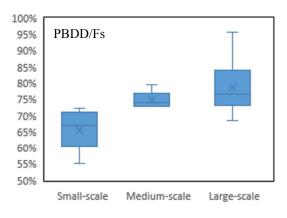
PBDD/Fs	WHO-TEF ¹
2378-TeBDD	1
12378-PeBDD	1
123478-HxBDD	0.1
123678-HxBDD	0.1
123789-HxBDD	0.1
1234678-HpBDD	0.01
OBDD	0.0003
2378-TeBDF	0.1
12378-PeBDF	0.03
23478-PeBDF	0.3
123478-HxBDF	0.1
1234678-HpBDF	0.01
OBDF	0.0003
-	

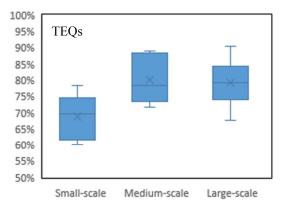
Discarded Desulfurization Inlet Outlet product fly ash Mass TEQ Mass TEQ Mass TEQ Mass TEQ Small-scale Plants 12.7 0.37 0.87 0.039 7.88 0.23 0.600.06 0.36 0.03 Medium-scale Plants 3.6 0.23 1.00 0.065 2.22 0.22 2.6 0.14 0.023 1.56 0.089 0.22 Large-scale Plants 0.14 0.02

Table S2. PBDD/F emission factors (in units of $\mu g t^{-1}$ and $\mu g TEQ t^{-1}$) for the inlet and

outlet stack gases, desulfurization products, and discarded fly ash.

Figure S1. PBDD/F concentration and PBDD/F TEQ mass balances for the desulfurization process (for the inlet and outlet stack gases and desulfurization products).





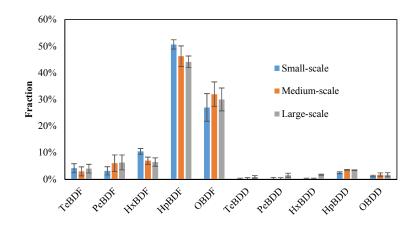


Figure S2. PBDD/F homolog distributions in the desulfurization product samples.

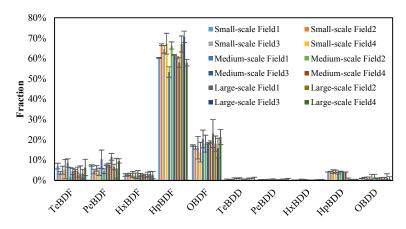


Figure S3. PBDD/F homolog distributions in the fly ash samples.

Figure S4. Removal efficiencies for the PBDF homologs.

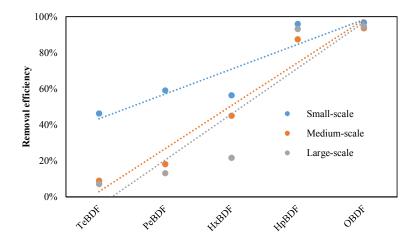
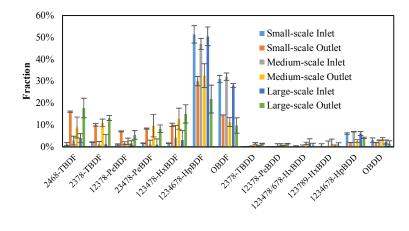


Figure S5. PBDD/F congener profiles in the inlet and outlet stack gas samples.



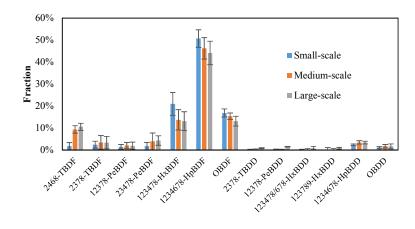


Figure S6. PBDD/F congener profiles in the desulfurization product samples.

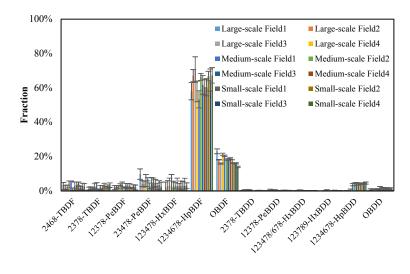


Figure S7. PBDD/F congener profiles in the fly ash samples.

Figure S8. Annual PBDD/F emissions in stack gases, desulfurization products, and discarded fly ash produced by sintering plants in China and the desulfurization product to stack gas PBDD/F concentration ratios and fly ash to stack gas PBDD/F concentration ratios between 2003 and 2015.

