

Results of the measurements of emissions of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans in two metallurgical plants representing ferrous metallurgy (an iron ore sintering plant) and non-ferrous metallurgy (a secondary copper smelter) are discussed in the paper. In the case of the secondary copper smelter dioxin concentrations were determined in the range from 0.03 to 8.1 ng TEQ/Nm³ and high variability of emissions was observed, which did not depend on the composition of material fed and the stage of smelting. In the case of measurements carried out in the iron ore sintering plant the concentrations ranged from 0.6 to 1.7 ng TEQ/Nm³. It was found additionally that a well-functioning electrostatic precipitator could reduce PCDD/Fs emissions even by 75% (with respect to the total mass of congeners), while off-gas recirculation had no significant effect on the emissions. The paper contains original results of dioxin emission measurements from a secondary copper smelter plant and an iron ore sintering plant in Poland. In the first plant, high variability of flue gas flow and concentrations of dioxins between successive batches as well as within a single smelting process was found. This problem has never been described in the literature. In the second plant, great stability of dioxin emissions from the iron ore sintering plant and high emission reduction efficiency (about 70%) of dioxins by an electrostatic precipitator were observed. No significant effect of gas recirculation on the PCDD/Fs emission was reported.

