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### 燃煤电厂烟尘铅排放状况外场实测研究

### Field measurement for lead emission in the plumes of coal-fired power plants

关键词: [燃煤电厂](#) [铅](#) [排放浓度](#) [排放因子](#)

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摘要: 选取30台燃煤电厂锅炉开展燃料铅含量及烟尘铅排放浓度的系列外场测试.结果表明,燃煤电厂燃料铅含量均值为 $8.50 \text{ mg} \cdot \text{kg}^{-1}$ ,烟尘铅平均排放浓度为 $0.0081 \text{ mg} \cdot \text{m}^{-3}$ ,排放因子为 $0.0643 \text{ g} \cdot \text{t}^{-1}$ .不同机组容量及有无选择性催化还原(SCR)装置状况下烟尘铅排放因子无显著性差异( $p>0.1$ ),不同除尘设施类型下烟尘铅排放因子有显著性差异( $p<0.1$ ),布袋除尘(Fiber Filter,FF)电厂烟尘铅排放因子低于静电除尘(Electrostatic Precipitator,ESP)电厂.本研究中铅排放因子低于国内估算值,与AP 42燃煤电厂铅排放因子处于同一水平.基于本研究排放因子计算的全国2011年燃煤电厂烟尘铅排放量为126.76 t.

**Abstract:** The lead content in the fuel and the emission concentrations of lead in the plumes were measured from thirty boilers at coal-fired power plants in this field sampling campaign. In this study the mean lead content in the fuel was measured to be  $8.50 \text{ mg} \cdot \text{kg}^{-1}$ . The mean concentration of lead emission in the plumes was  $0.0081 \text{ mg} \cdot \text{m}^{-3}$ , and the mean emission factor was  $0.0643 \text{ g} \cdot \text{t}^{-1}$ . Compared with these results, it was found that there was no significant difference ( $p>0.1$ ) between lead emission factors from boilers with various unit capacities and with or without SCR, while there was a significant difference ( $p<0.1$ ) between the lead emission factors from boilers with various types of dust collectors. Furthermore, the lead emission factors in the plume from the boilers with fiber filter (FF) collectors were lower than with electrostatic precipitator (ESP) collectors. The lead emission factor of this study was at the same level as AP 42, but lower than the domestic estimated value. The amount of the national lead emission in the plumes of coal-fired power plants in 2011 was calculated to be 126.76 t.

**Key words:** [coal-fired power plant](#) [lead](#) [emission concentration](#) [emission factor](#)

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