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中国危险废物和医疗废物焚烧处置行业二(口恶)排放水平研究

PCDD/Fs emission levels of hazardous and medical waste incineration in China

关键词: [危险废物](#) [医疗废物](#) [焚烧炉](#) [烟气](#) [飞灰](#) [二\(口恶\)](#) [排放特性](#)

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摘要: 通过调研全国危险废物和医疗废物焚烧处置设施,对包含二(口恶)排放水平的设施按处置对象、炉型和处理量分类,并作系统分析和研究.结果表明现有危险废物焚烧设施烟气中二(口恶)的浓度比医疗废物低,达标率为74.19%;危险废物选用回转窑处置效果较好,达标率为66.67%;而医疗废物选用回转窑或热解炉,要综合考虑处置规模、生产成本和二(口恶)排放总量等因素;危险废物介于 $10\sim 30\text{ t}\cdot\text{d}^{-1}$ 和医疗废物介于 $10\sim 20\text{ t}\cdot\text{d}^{-1}$ 的处置设施要尤其注意二(口恶)的排放问题;医疗废物焚烧飞灰中二(口恶)的均值浓度为危险废物6倍以上,仅有16.67%满足填埋要求.二者烟气中二(口恶)的浓度分布以1, 2, 3, 4, 6, 7, 8-HpCDF、2, 3, 7, 8-TCDF和OCDD为主.

Abstract: Through a national wide review on the incineration facilities for hazardous and medical wastes, a comprehensive analysis on the dioxin emission levels was conducted by classifying the facilities according to disposal object, furnace type, and disposal capacity. Results show that the concentration of dioxins in flue gases from the existing hazardous waste incinerators (HWIs) is lower than that of the medical waste incinerators (MWIs), with a compliance rate of 74.19%. Rotary kiln could be a proper choice for hazardous waste disposal with a compliance rate of 66.67%. However, the disposal capacity, production cost, and dioxin emissions should be carefully considered when pyrolysis furnace or rotary kiln was used as the medical waste treatment reactors. Dioxin emission should be paid particular attention for the facilities with a capacity of $10\sim 30\text{ t}\cdot\text{d}^{-1}$ for HWIs and $10\sim 20\text{ t}\cdot\text{d}^{-1}$ for MWIs. The average concentration of dioxins in MWI fly ashes is about six times higher than that of HWI counterpart, with only 16.67% meeting the landfill requirements. PCDD/Fs concentration distribution in flue gases from HWIs and MWIs are characterized by higher fractions of 1,2,3,4,6,7,8-HpCDF, 2,3,7,8-TCDF and OCDD.

Key words: [hazardous waste](#) [medical waste](#) [incinerators](#) [flue gas](#) [fly ash](#) [PCDD/Fs](#) [emission characteristic](#)

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