

## PAHs contaminated soils remediation by ozone oxidation

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### ABSTRACT

Remediation of PAHs contaminated soils by means of chemical oxidation is considered an attractive option because of its effectiveness in the removal of PAHs from polluted environmental matrices. In recent years, the use of ozone has gained increasing interest since this technology can be successfully implemented both in situ and ex situ as well as remediation time is fast compared to other options. Moreover, the use of gaseous ozone can provide several advantages over aqueous oxidants, such as Fenton's reagent or permanganate, as a consequence of its easier spread into unsaturated porous media. In this paper, after an introduction of PAHs properties and their environmental fate, and a short overview of the remediation technologies for the treatment of PAHs contaminated soils, the use of ozonation process for the removal of PAHs from contaminated soils is reviewed. In particular, PAHs degradation kinetics by ozonation, factors effecting ozonation efficiency, formation of oxidation intermediates and toxicity are tackled.

*Keywords:* Biological treatments; Chemical oxidation; Physical treatments; Thermal treatments; Oxidation intermediates; Toxicity

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