Review

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Farshid Ghanbari, Mahsa Moradi

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Application of peroxymonosulfate and its activation methods for degradation of environmental organic pollutants: Review

Farshid Ghanbari[1a,b], Mahsa Moradi[2c,d]

a-Environmental Technologies Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
b-Department of Environmental Health Engineering, School of Public Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
c- Department of Environmental Health Engineering, School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
d-Department of Environmental Health Engineering, School of Medical Sciences, Tarbiat Modares University, Tehran, Iran.

Abstract

The degradation of refractory organic compounds to harmless matters is one of the major concerns of environmentalists. Advanced oxidation processes (AOPs) are promising technologies producing the hydroxyl and sulfate radicals for pollutant degradation. Recently, much attention has been paid to producing sulfate radicals by peroxymonosulfate (PMS) as precursor for sulfate radical production. Nowadays, the use of PMS has acquired popularity thanks to its high reactivity and also to its high potential in generating sulfate radical. Actually it is becoming an alternative for hydrogen peroxide and persulfate. PMS is an unsymmetrical oxidant which can be activated to produce both hydroxyl and sulfate radicals. Various methods of PMS activation have been reported in literature including transitional metals (homogenous and heterogeneous), ultraviolet, ultrasound, conduction electron, carbon catalysts and so on. PMS activation has been broadly applied for a wide range of pollutants mostly in aqueous

[1] Corresponding author: Tel.: +989122835398.
E-mail address: Ghanbari.env@gmail.com,
(F. Ghanbari)
[2] Corresponding author: Tel.: +989126907929
E-mail address: Moradi.env@gmail.com,
(M. Moradi)