

# CHEMICAL TREATMENT (AOP)

## FENTON REACTOR

### Introduction

Fenton process is an advanced oxidation process (AOP) of which Fenton's reagent ( $\text{H}_2\text{O}_2 / \text{Fe}^{2+}$ ) is used to generate OH radical for chemical oxidations.

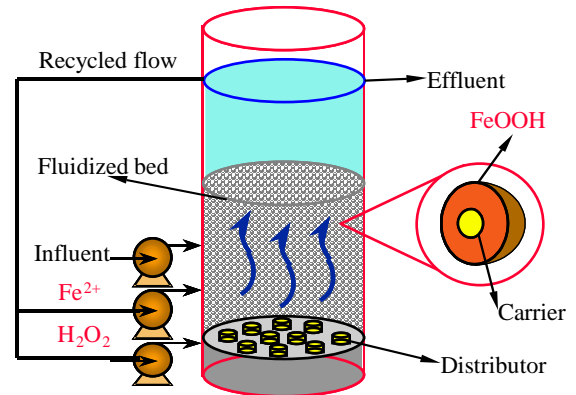
Fenton family technologies include two types of Fenton reactor, Fered-Fenton and FBR-Fenton. Fered-Fenton is applied for the pre-treatment of high strength wastewater, while FBR-Fenton is to treat residual refractory compounds for polish wastewater.

### Features

- FBR-Fenton produces iron sludge 70% less than the conventional Fenton process.
- Electrogenerated  $\text{Fe}^{2+}$  produced via the reduction of  $\text{Fe}^{3+}$  gives 80% of iron sludge reduction in Fered-Fenton.
- Enhance pollutant biodegradation rate
- Color removal

### Benefits

- Low capital investment
- Small footprint
- Easy process control



▲ Schematic diagram of FBR-Fenton reactor

### Applications

- Refractory organic wastewater treatment
- Colored wastewater treatment
- Surfactant wastewater treatment
- Suitable for surface finishing, dyeing, PET fiber, PCB, electronics and semiconductor industries

### Patents

- US 6.126.838, 6.143.182
- NL 1009661
- DE 19835592A1
- TW 140824



▲ FBR-Fenton reactor for ABS resin industry



▲ Fered-Fenton reactor of a PCB plant