

Enhances biodegradability, satisfies wastewater standards, and reduces treatment costs.

Sumitomo Precision Products Co., Ltd. Improving biodegradability of biorefractory compounds (COD) by ozonation

Features

- Preozonation enables biodegradation of wastewater containing biorefractory compounds.
- Preozonation stabilizes the raw water quality, enabling stable biodegradation.
- The system is easily incorporated into existing systems, and reduces running costs such as expenses on replacement of activated carbon and wastewater treatment chemicals.

Overview

(Technical principles, actions, etc.)

The technology converts biorefractory compounds contained in wastewater to biodegradable compounds by “preozonating” the wastewater in the upstream of the biodegrading process in the wastewater treatment flow. Biorefractory compounds are difficult to biodegrade, and may be inhibitory to microbial degradation. “Preozonation” oxidizes biorefractory compounds using ozone, and breaks them down into compounds digestible by microbes. Furthermore, the highly concentrated oxygen used as an ozone source improves the dissolved oxygen (DO) level and provides an environment favorable to microbes. The preozonation process breaks biorefractory compounds down into forms digestible by microbes, offers an environment favorable to microbes, and improves biodegradability.

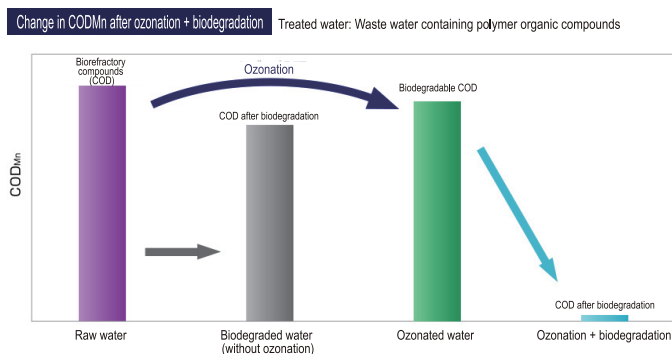
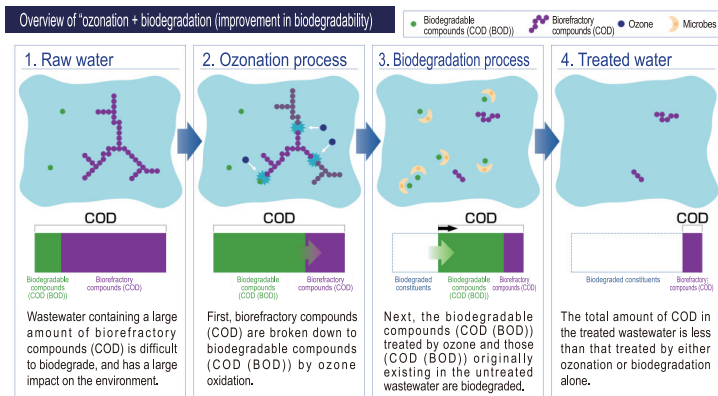
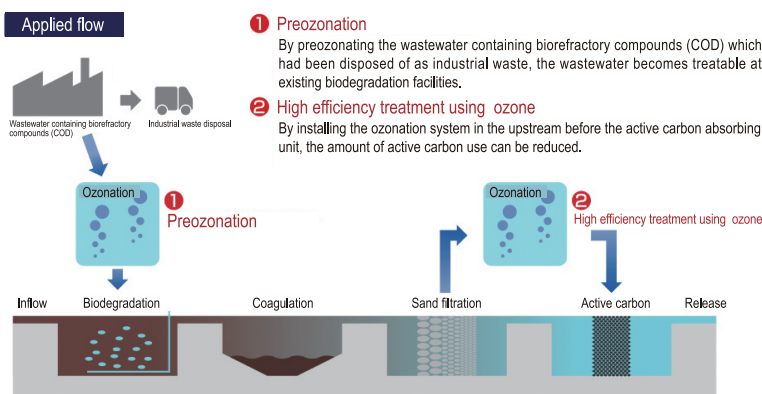
Introductory Track Record

- Experience in ozonation + biodegradation treatment
Domestic: 20 cases
Overseas: 1 case

Effects

Example of “preozonation + biodegradation” treatment
Treated water: Wastewater containing polymer organic compounds
Treatment capacity: 60m³/d
CODMn: 3000 mg/L

(i) Eliminated the need to dilute the treated water. (ii) Reduced the amount of active carbon use: Reduced to approximately 1/3
Due to the polymer organic compounds contained in the water, the water was degraded only down to the CODMn level of 1200mg/L when treated by biodegradation alone. Additional treatments by coagulation and active carbon could only lower the CODMn level down to 60 mg/L, after which the water had to be diluted before being released. The large consumption of active carbon also contributed to high running costs. Preozonation of the wastewater improved the CODMn level down to 150 mg/L after biodegradation, and further down to the 20mg/L level after treatment by active carbon, a level where the dilution of the treated water was no more necessary. The amount of active carbon used was also reduced to 1/3.



Sumitomo Precision Products Co., Ltd. Water Technology Center

1-10, Fuso-cho, Amagasaki-City, Hyogo 660-0891

● TEL / +81-6-6489-5943 ● FAX / +81-6-6489-5849 ● E-Mail / sibata-s@spp.co.jp ● <http://www.spp.co.jp/category/ozone/>

※Note: This publication introduces examples of technologies and products believed useful towards solving environmental and energy issues. In no way does it constitute guarantees concerning their transfer or sale.

環境分野
Chemical manufacturing industry - Chemical product manufacturing industry -
Pharmaceutical and petrochemical manufacturing industry - Surfactant manufacture -
Food and beverage manufacturing industry - Water industry - Sewerage treatment -
Final landfill sites - Other applications

Water

Energy saving/Energy recovery

Energy storage/Energy creation

New energy

Waste disposal/
Recycling/
Resource saving

Air

Soil

Other