

WASTEWATER TREATMENT PROCESS



Save Energy and Electricity

Aeration is required in wastewater treatment to provide oxygen for biomass development, oxidation of organic matter and for aerobic digestion. So higher the oxygen demand, higher the aeration and higher electricity consumption in aeration tank. MiCroBial Technologies helps in reducing electricity and saving energy. Due to high concentration of BOD, O₂ is used to degrade BOD and so requiring high aeration. MiCroBial Technologies microbes degrade BOD & organic matter and help in maintaining O₂ in aeration tank and ultimately reducing the requirement of oxygen and electricity.

Collection Tank

Collection tank where effluent is collected and PH is adjusted to its optimum as 7-8 with the help of acid or base. Solids settle to the bottom of the collection tank.

Anaerobic Digester

Wastewater treated anaerobically (under anaerobic condition). High strength wastewater treated in AD to reduce the pollutant.

1. Hydrolysis: The breaking of large organic molecules into simpler compounds
2. Acidification: The formation of organic and acetic acids
3. Methanogenesis: The formation of methane gas

Sludge Reduction

Sewage sludge is obtained from wastewater treatment in sewage treatment plants. The sludge consists of two basic forms, sludge and secondary sludge, also known as activated sludge in the case of the activated sludge process. Municipal sewage sludge (MSS) or only sewage can be a solid, semi-solid, or liquid muddy residue. It contains mainly proteins, sugars, detergents, phenols, and lipids and also includes toxic and hazardous organic and inorganic pollutants source. Sewage is a mixture of domestic and industrial wastes that contains above 99% water. Sludge contains organic matter, dead bacteria, live bacteria, suspended solids.

MiCroBial Technologies microbes use this sludge as food for their multiplication and biochemical reactions and reduce the sludge by 70-80% depending on the conditions.

wastewater
Treatment
MiCroBial
TECHNOLOGIES

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Phosphorus Removal

Unlike nitrogen removal from the sewage, Nitrogen can be degraded to nitrogen gas by microbes, phosphorus can't be removed from the sewage easily. Nitrogen and phosphorus are the nutrients that are responsible for the eutrophication process caused by different environmental issues. Mainly phosphorus is removed by the coagulation process. MiCroBial Technologies helps in the removal of phosphorus by biological processes by utilizing the phosphorus for biomass development and used to develop its own body.

Odor Management

Odor of wastewater can be controlled by MiCroBial Technologies microbes. MiCroBial Technologies product can be applied through spraying all over the STP/ETP and dosed into the aeration tank and anaerobic tank. Microbes control the odor of ammonia, H₂S, VOC, by enzymatic biochemical reactions.

Nitrogen Removal

Nitrogen removal is a very important process in wastewater treatment. Nitrogen removal is done by the nitrification and denitrification processes in the treatment. The process is done in sequence: ammonification → nitrification → denitrification. In this process, ammonia is degraded to nitrite and nitrate, and nitrogen gas is produced by the nitrifying bacteria and denitrifying bacteria. Nitrogen will be used by microbes to develop biomass in the treatment process. MiCroBial Technologies has nitrifying and denitrifying bacteria and set up nitrification and denitrification processes.

Aerobic Digester

Wastewater treated aerobically with the help of aerobic microbes where microbes break down organic matter and clean the wastewater. Most of the pollutants, organic matter (BOD/COD/TSS) is removed in aerobic digestion. 80% organic matter or pollutant will be removed in biological treatment only. MiCroBial Technologies develop biomass/MLSS and carry out aerobic processes.

