



Confectionary Plant Wastewater Treatment System

In 2004, Mitsubishi Rayon was awarded "The Nikkan Kogyo Shimbun Prize".

• Name of System

"C" Confectionary Plant
Wastewater Treatment System
(Yamanashi Prefecture)

• Start of Operation

April 1996

• Outline of System

Wastewater from confectionary production is treated with a membrane bioreactor, then released to the environment.

• Throughput

1,000 m³/day

• Influent BOD

2,000 mg/L

• Membrane Modules

UMF834LF

• Membrane Cutoff

0.4 μm

• Advantages of Membrane Use

A high MLSS concentration can be maintained in the aeration tank, enabling an approximately two-fold increase in throughput over the previous system.

System Features

A wastewater treatment system having a throughput of 600 m³/day was originally employed at this confectionary plant, but a higher wastewater treatment capacity was needed to keep pace with increases in the production volume. Because space limitations at the site made it impossible to enlarge the existing aeration tank, use was made of a membrane bioreactor. The result was a 1.7-fold increase in the throughput to 1,000 m³/day, and improved water quality.



General view of system

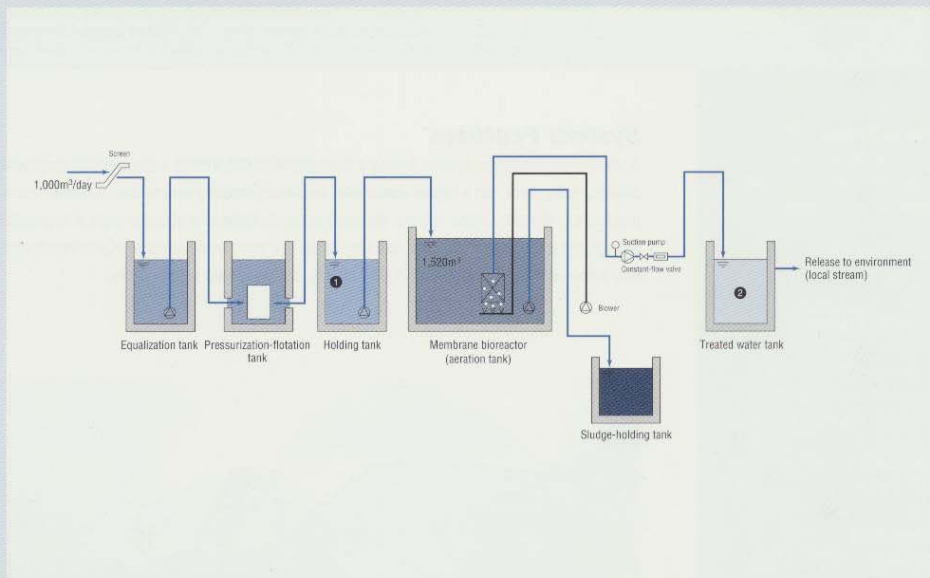
Remarks

Owing to the high level of oils within the feed water, in the present system the oils are first removed by pretreatment involving pressurization and flotation.



The hollow-fiber membranes are made of polyethylene and have a very tough construction characterized by high strength and excellent resistance to flexing fatigue. Moreover, the membranes are highly acid and alkali resistant, and impervious to microbial attack, making them suitable for use in a broad range of wastewater treatment applications.

• **Flow Sheet**



• **Water Quality Analysis**

Test items	Membrane bioreactor influent (1)	Effluent (2)
pH	(-)	4
BOD (mg/L)	2,000	3
COD (Mn) (mg/L)	600	12
SS (mg/L)	-	<1
T-N (mg/L)	50	1
T-P (mg/L)	20	1

(average monthly values)

• **Operating Conditions**

MLSS: 10,000 mg/L
 DO: 0.2-0.8 mg/L
 HRT: 36 hours

Suction Pump Operation:
 9 minutes on (running)
 3 minutes off (at rest)

Data furnished by: Daiki Co., Ltd. Phone: +81(267)64-8000

This sheet presents one example of an industrial wastewater treatment system. Each system must be designed according to the water quality of the influent and the target wastewater standards.



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