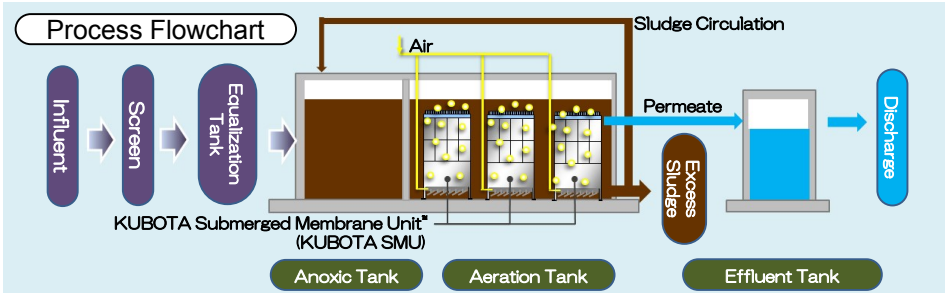




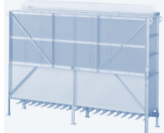
Water and Environment related products of KUBOTA

KUBOTA Corporation

KUBOTA Membrane Bioreactor (MBR) Process



Product Lineup of KUBOTA Submerged Membrane Unit™ (KUBOTA SMU)



ES series



RM series



EK series



RW series

Features

- ✓ **Remarkably Small Footprint:** The KUBOTA MBR process requires less aeration tank volume than a CAS process, and does not require any final clarifier.
- ✓ **Excellent Permeate Quality:** Permeated water from the KUBOTA SMU is highly treated. You can reuse the treated water for irrigation, toilet flushing etc..

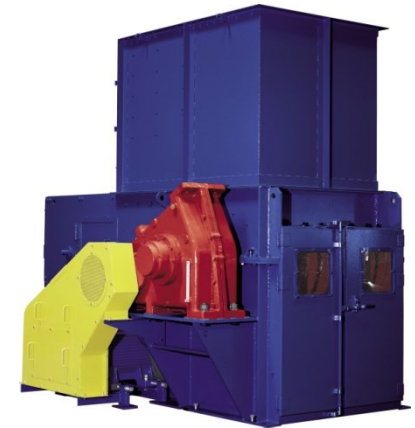
Overview (Technical principles, actions, etc.)

The KUBOTA Membrane Bioreactor (MBR) process is a proven wastewater treatment method which combines a biological treatment process and a membrane filtration process for final solid-liquid separation with KUBOTA SMU. This is applied to municipal and industrial wastewater treatment.

Metal Scrap/Solid Waste Reduction and Recycling Equipment



Vertical Shredder: KE series



Single-shaft Shredder: NKR series

- ✓ **We offer best shredder solutions that realize simple and low-cost separation to promote efficient recycling.**
- ✓ **Our shredders process scrap metals and solid wastes, such as waste home electric appliances, PCBs, turnings, bulky waste, and combustible/incombustible wastes.**

Vertical Shredder: features compound shredding with special hammers and reduces waste materials into small, uniform particle sizes. Its vertical structure allows for highly efficient reduction of bulky waste.

Single-shaft Shredder: features shear-shredding with rotating and fixed cutters and employs the shredder-specific special torque limiter to ensure safe and stable operation.

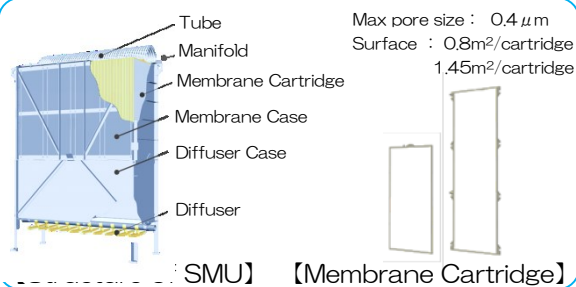
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Performance /specifications of technology / product

KUBOTA Submerged Membrane Unit™ (KUBOTA SMU) has “Flat Plate” type membrane. The membrane sheet is made of chlorinated polyethylene with maximum (nominal) pore size of 0.4 μm (average: 0.2 μm) which blocks most microorganisms in the activated sludge.

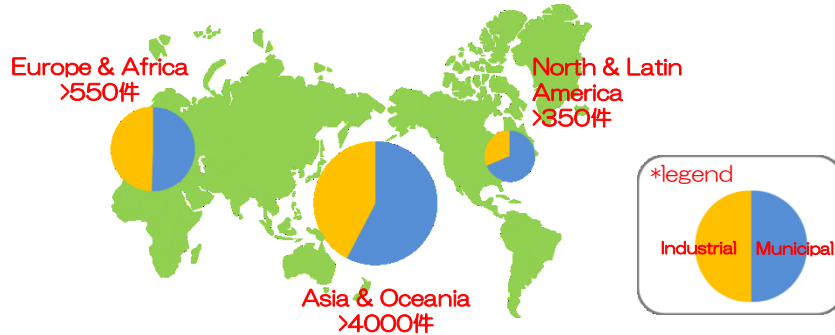


【Data in a sewage plant】
 (Annual Average in F STP)

Item	Influent	Effluent
BOD ₅	99	1.0
SS	120	N.D.
T-N	36	5.8
Coli-form	—	N.D.

Usage examples / result

Greater than 5,000 Installations all over the world, including various types of industrial wastewater.
 (Food, Beverage, Pharmaceutical, Dyeing, Livestock, Laundry, etc.)



Industrial Park

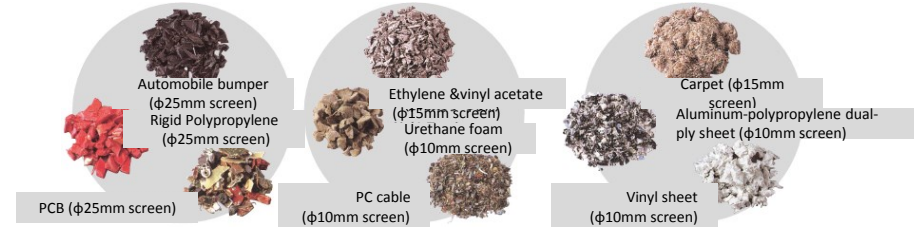


Pharmaceutical Factory

Vertical Shredder KE series: Output particles(example) after shredding/separation



Single-shaft Shredder NKR series: Output particles(example) after shredding/separation



Our machines have been installed by global customers for efficient waste recycling.

[Vertical Shredder KE series: track record]

	End User	Product	Application
South Korea	Metal scrap processor/recycler	KE-600, etc: 8 units	Aluminum scrap
China	Metal scrap processor/recycler	KE-400S, etc: 5 units	Home appliances
Europe	Metal scrap processor/recycler	KE-600, etc: 4 units	Home appliances
U.S.A.	Metal scrap processor/recycler	KE-400: 1 unit	Automobile scrap
SE Asia	Metal scrap processor/recycler	KE-400S, etc: 2 units	Aluminum scrap

[Single-shaft Shredder NKR series: track record]

	End User	Product	Application
South Korea	Cement manufacturer	KR-200, etc: 4 units	Blowing in kiln
	Waste plastic processor/recycler	KR-200, etc: 4 units	RPF pretreatment
Europe	Waste plastic processor/recycler	KR-150: 1 unit	Waste plastics
SE Asia	Paper manufacturer	NKR-200, etc: 3 units	Alternative boiler fuel

