UMI
UNITEDMIZU INDUSTRIES PVT. LTD.

Transforming Industries

with Cutting-edge Zero Liquid Discharge Solutions

ABOUT US

UMI is a leading engineering company specializing in innovative Turnkey Zero Liquid Discharge (ZLD) Solutions. They effectively minimize liquid waste from industrial processes by converting it into reusable water and safe solids, while also ensuring environmental protection. Additionally, ZLD enables the recovery of valuable by-products, maximizing profitability for businesses.

We offer Caustic Recovery Plants, Multiple Effect Evaporator Plants, Mechanical Vapor Recompressors, Agitated Thin Film Dryers, and Stripper Systems. With a state-of-the-art facility, experienced professionals, and meticulous project management, UMI delivers exceptional results for clients.

BENEFITS OF CHOOSING US

Proven designs with advanced analysis and customizable evaporators for any capacity

Minimized product wastage through strong process expertise and highly energy-efficient systems

Dedicated team of experienced service engineers for customized designs and variable operating conditions

VISION

To be the global leader in providing innovative and sustainable engineering solutions for Zero Liquid Discharge, revolutionizing industries and ensuring a cleaner and greener future.

MISSION

Our mission is to deliver turnkey Zero Liquid Discharge solutions that exceed client expectations, optimize water management, and minimize environmental impact. Through exceptional project management and a commitment to excellence, we aim to transform industrial wastewater treatment and contribute to a more sustainable world.

CRP
Caustic Recovery Plant

Caustic Recovery Plant (CRP) re-concentrates weak lye by heating in a multiple effect evaporation plant. Vapor is released through water evaporation, increasing its concentration. This process circulates in the CRP until the desired concentration is achieved. Textile mills using caustic soda in mercerizing machines generate dilute caustic soda drain with varying density (3% to 8%). UMI CRPs recover and concentrate this weak lye, reducing financial losses and treatment expenses at ETP. Mercerization produces diluted caustic soda waste, which UMI CRPs convert into reusable concentrated caustic soda.

GYRATORY VIBRO SCREEN FILTER

The Gyratory Vibro Screen Filter improves plant effi ciency by removing lint, fluff, and fiber from wash liquor, minimizing fouling of heat transfer material. It utilizes a vibrating screen device with a 100 mesh S.S. screen and an electric motor for automatic solid waste collection and disposal, eliminating the need for human intervention.

HYDROGEN PEROXIDE LYE CLEANING SYSTEM

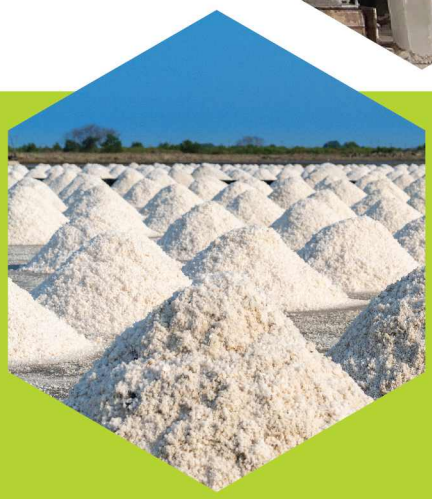
The system removes impurities from lye used in the mercerizing process. Hydrogen peroxide reacts with organic materials, reducing lye viscosity and causing impurities to float or settle. Specifically designed mixing and dosing tanks maximize residence time and facilitate impurity removal. This process also bleaches dirt and reactive dye particles in the lye.

SUSTAINABILITY AND QUICK RETURN ON INVESTMENT

- Fast payback time (within 6 months)
- Waste energy used to generate hot water
- Environmental protection with reduced chemical usage
- Caustic recovery is possible in grey fabric mercerization

MEE
Multi Effect Evaporator

Evaporation is a process that concentrates a solution by applying heat to separate purified water. Multi-Effect Evaporator, specifically the Forced Circulation Evaporator type efficiently uses steam heat to evaporate water in a sequence of vessels at decreasing pressures. It is the most efficient method for achieving complete zero-liquid discharge in industrial effluent. The process involves preheating the feed, heating it with external steam, and conducting heat transfer to evaporate water. A vapor-liquid separator separates vapor from the water-vapor mixture, while the concentrated liquid is recirculated. Adding multiple effects increases steam economy, with each effect using vapor from the previous one as the heating medium.



ADVANTAGES

Maximizes steam economy

Suitable for concentrating high-viscosity materials and products with higher solids content

Sustainable and successful conventional method for Zero Liquid Discharge (ZLD)

APPLICATIONS

- Zero Liquid Discharge (ZLD)
- Evaporative crystallization of brine (NaCl)
- Concentration of effl uent with high suspended solids
- Fruits pulp concentration

MVR
Mechanical Vapor Re-compressor

MVR (Mechanical Vapor Recompression) technology reduces energy consumption in evaporator plants compared to conventional methods, resulting in lower operating costs. In MVR, steam is compressed at higher pressure using a mechanical pump, creating high heat energy for further evaporation. The compressed steam serves as a continuous heat resource, circulating in the system and consuming electrical energy for evaporation operations. Energy consumption of the compression fan may vary depending on material properties.

- Tomato paste manufacturing
- Sodium sulfate crystallization
- Wastewater treatment
- Salt recovery
- Product concentration

ADVANTAGES

Minimal or no requirement for live steam

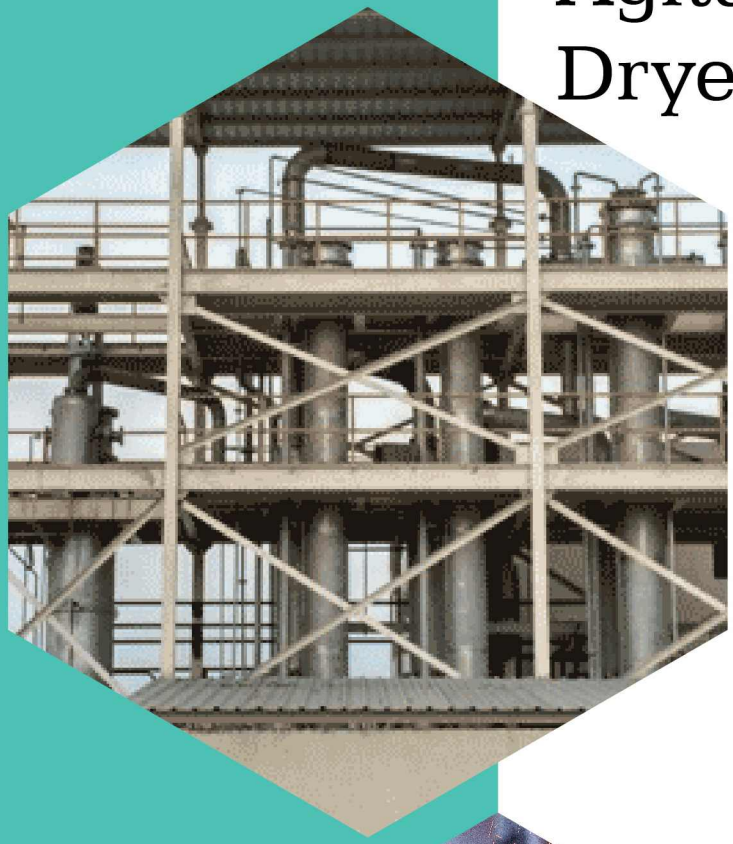
Low energy consumption resulting in reduced operation costs

Compact design for space efficiency

No or small heat exchange area required for condensation

ATFD

Agitated Thin Film Dryer



Agitated Thin Film Dryer (ATFD) is ideal for the continuous processing of concentrated materials for drying. It evaporates water/solvents to produce concentrated liquid for drying into dry powder or flakes. The design includes a cylindrical, vertical body with a heating jacket and a rotor equipped with pendulum blades. The produced vapors rise upwards, counter-current to the liquid and are condensed in a cyclone separator and recovered as condensate. The system operates under vacuum for temperature-sensitive products and at atmospheric conditions for normal drying.

APPLICATIONS

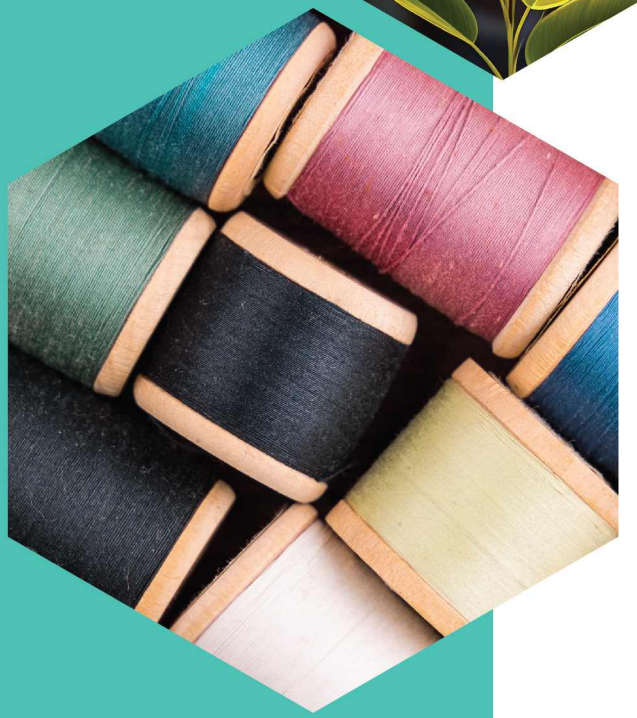
- Food and beverage industry
- Chemical industry
- Pharmaceutical industry
- Pesticide industry
- Printing and dyeing industry
- Metallurgical industry

FEATURES

- Comprehensive solution for drying applications
- Removes the need for rotary dryer, pulverizing, and grinding after drying
- Compact design minimizes space requirements
- Low maintenance enhances production efficiency

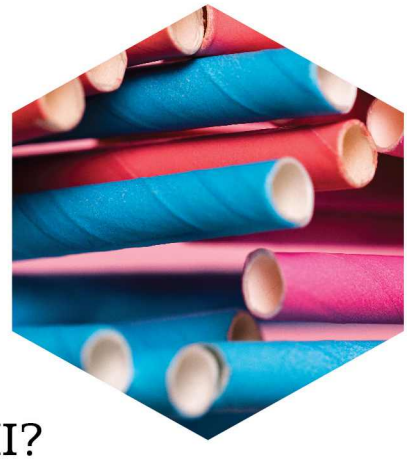
Chemical
A Green Conscience

We maintain a green conscience and manufacture eco-friendly products that reduce the load on the Effluent Treatment Plants, generating sizeable saving to our clients. Products go through stringent quality check in the in-house lab by qualified technicians so that they comply with the various international standards. Most of the products comply with GOTS and REACH certification, ensuring that adherence in performance is always met.



CUSTOMER CENTRIC SOLUTION

We work in tandem with clients to understand the process and the process machinery they use and offer Customized and Unique Solution 'to them. Our growth is synchronized with the critical needs of our clients and UMI's ability to offer perfect solution. Our client base is spread across the nation with renowned name getting associated with us. We are known for our consistence quality, customization of product and technical support on the shop floor for trouble shooting snags in the process. Our currents export network includes distribution and sales in Thailand, Sri Lanka, Bangladesh, Turkey and Egypt.



WHY UMI?

There is no dearth of auxiliary manufacturers and suppliers in the market. But UMI is one of the few firms that stand apart in the crowd. UMI follows simple policy of client First and so emerges as the most reliable partner, standing by its clients on all such counts:

- Trouble shooting on the floor shop and developing a product for the same
- Tailor made product that meet the specialized needs of specific application
- Keeping a green conscience and introducing green product
- Consistency, quality production, customization-CQO is a way of life at UMI

UNITEDMIZU INDUSTRIES PVT. LTD.

UnitedMizu Industries Pvt. Ltd.

125, Udyog Kshetra, Goregaon Mulund Link Road, Mulund (W), Mumbai 400 080

T +91 22 3504 1917 **M** +91 99675 35886 **W** www.umipl.in **E** sanjay@umipl.in