

200 - 400

Gallons Per Week



DRUM EVAPORATORS

Efficiently Dewater Small Volume Waste Streams
Industrial Wastewater Minimization
Reduce Hauling & Disposal Costs



ENCON
EVAPORATORS

www.evaporator.com

Why Choose Evaporation?

Evaporation is a time-tested & cost-effective method for reducing the volume of water-based waste



Hauling is Costly

Industrial and commercial facilities that generate wastewater spend too much money paying for hauling & disposal of waste streams that are mostly comprised of water.



Evaporation is Cost Effective

ENCON Thermal Evaporators are utilized by 1600+ facilities worldwide to evaporate the water portion of water-based wastes, reducing hauling/disposal volumes and cost by up to or even exceeding 99%.



Reduce a holding tank of wastewater



Advantages of Evaporation

- ✓ Can handle different waste streams simultaneously
- ✓ Can handle very challenging and complex waste streams
- ✓ Dramatically reduces disposal volume & cost
- ✓ Eliminates sewer discharge accountability
- ✓ Achieve ZLD
- ✓ Safe to operate 24/7
- ✓ Low operating costs
- ✓ Requires less operator intervention than most wastewater treatment technologies
- ✓ Very effective for process stream concentration



to a barrel of residue!*

*example is based on a 98% reduction; reducing a 2,600 gallon tank of wastewater to 52 gallons of residue. Actual reduction percentage will vary based on chemistry and characteristics of the wastewater.

Features & Benefits



Concentrate and Dispose of Residue in Same Drum

The process vessel for ENCON Drum Evaporators is a steel 55-gallon drum. Once the residue has reached its endpoint, the drum can simply be capped for disposal, minimizing operator intervention.

Hinged Lids and Side Walls for Easy Access

The lid and side walls of the ENCON Drum Evaporator are hinged and can be easily rolled in and out on the included drum dolly.

Heating Elements Do Not Contact Solution

The low-watt-density heating elements are mounted and insulated on the sides of the ENCON Drum Evaporator and never come in contact with the wastewater. This maintains energy efficiency without concern for heater burnout and allows the evaporator to dewater high solids waste streams.

Mist Eliminator System

ENCON Drum Evaporators utilize a 316 stainless steel mesh mist eliminator pad, which is compression fit into a stainless housing to capture even the smallest droplets.

Control Panel

Intuitive, simple to operate control panel continuously monitors liquid temperature, liquid level and cycle time. Separate temperature and timer controls, main power selector switch, main power and heaters indicator lamps, low level and high temp warning lamps.

Fabrication

All ENCON Drum Evaporators are clad with a polished 304 stainless steel exterior which provides greater corrosion resistance than painted surfaces.

What is a Drum Evaporator?

ENCON Drum Evaporators are electrically heated small volume evaporators that are easy to use and economical to operate. The DE-2 is a batch evaporator (auto-fill option is also available) that can process 200 gallons per 5-day week. The DE-4 is an auto-fill evaporator that can process 400 gallons per 5-day week.

How does it work?

Both models completely encapsulate a 55-gallon drum of wastewater and heat from the outside, thereby eliminating contact of the heating elements with the wastewater. This makes the ENCON Drum Evaporator appropriate for not only standard wastewater streams that can be handled in other types of evaporators, but also for de-watering waste streams with high solid loading, such as water-based inks, paints, adhesives, and concentrated residue from other ENCON Evaporators.



Process Description

Typical Batch Operation (DE-2 Drum Evaporator)



- 1 Place a 55-gallon open top drum onto the drum dolly. Transfer wastewater into the drum to within 6-8 inches of the top. With the evaporator in full open position, roll the drum into the evaporator. Wrap the rope gasket around the drum so that a positive seal will be made when the clamshell walls are closed and secured.



- 2 Close and secure the clamshell walls and lid with the latching handles.



- 3 The evaporator stack is then connected to the flexible section of the permanent exhaust stack with a quick disconnect fitting.

- 4 Turn the red power switch to the "ON" position. Allow the system to heat up to boiling temperature. The system will shutdown upon reaching the low level or high temperature setpoint.



Auto Fill Operation (DE-4, DE-2 with Auto Fill Option)



The ENCON DE-2 Drum Evaporator can be modified to run in the auto-fill mode (optional high-level probe required). The ENCON DE-4 only operates in auto-fill mode. This mode requires plumbing from a feed pump to the inlet on the top of the evaporator lid. This allows the automatic and continuous refilling of the evaporator between the height of the two level probes until either the high temperature set point is reached or there is no longer water to be processed in the feed tank.

Drum Dryer

Upgrade the ENCON Drum Evaporator to a Drum Dryer and Efficiently & Affordably Dewater Concentrated Slurries & Sludge to a Dry Condition

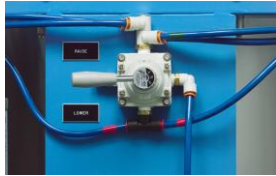
Simple to Operate

First reduce wastewater to a concentrated slurry or sludge in standard drum evaporator mode. Then operate in dryer mode to dewater the concentrated slurry or sludge to a dry condition.



Pneumatic Lifting System

Pneumatic lifting system allows easy removal of lid and agitator system at the completion of drying. Mechanical safety latch and microswitch



interlock switch provides safe and reliable operation.



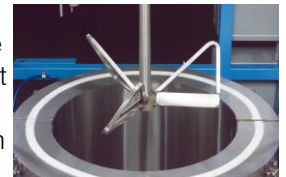
Concentrate, Dry, & Dispose of Residue in One Drum



Using a 55-gallon steel drum as the process vessel minimizes both handling and time-consuming cleaning.

High Torque/Low Speed Mixing System

A powerful high torque motor and gear reducer combined with a 316ss agitator provide gentle and consistent agitation even as the solution becomes viscous and solid.



Efficient Small Volume Drying That Just Works

Sludges or slurries, especially in small volumes, can be cost prohibitive to dry. Simple tank style dryers (a tank heated from the outside by oil or air, without agitation) are inefficient, prone to hard-to-remove build up and often provide inconsistent results. It's a simple fact that, without an agitator, it is difficult to evenly dry a batch, inside and out.

The ENCON Drum Dryer solves these issues in a compact, affordable unit. The ENCON Drum Dryer completely encapsulates a 55-gallon drum of sludge or slurry and heats it from outside the drum. Since the heating elements do not contact the sludge or slurry, there is no requirement to clean the heat transfer surface. Temperatures are controlled with a thermocouple and timer system to provide consistent heating and accurate levels of dryness. High torque motor and gear reducer provide gentle and consistent agitation even as solutions become more viscous and solid. Typical applications include: residue concentrate from ENCON Drum, thermal and MVC Evaporators, concentrated salt slurries, viscous solutions such as water-based inks and paints, and other water-based sludge applications.

Why Choose ENCON?

ENCON Evaporators has been in business since 1993 designing, fabricating, selling and servicing our line of evaporators and related technologies.

FULL RANGE OF UPGRADES, ACCESSORIES AND SERVICES TO UNLOCK YOUR EVAPORATOR'S FULL POTENTIAL



ENCON offers a full range of upgrades, accessories and services to minimize labor and maximize return on investment.

- ✓ Recover your wastewater as clean condensate with our condenser package!
- ✓ Work with our consultative Sales Engineers to specify a turn-key system.
- ✓ Utilize our air permitting / permit-exemption services.

TRUSTED BY THE WORLD'S MOST RESPECTED COMPANIES



OVER 1,600 INSTALLATIONS WORLDWIDE

ENCON Evaporators was founded on the principle of design innovation. In 1993 ENCON introduced the world's first thermal evaporator with mist eliminator technology incorporated as part of the standard design. Today that tradition of innovation continues. We are constantly seeking client feedback which drives continuous product improvement. Our mission is to ensure that ENCON products are not only the premier evaporators on the market today, but that they will be even better tomorrow.

We encourage you to speak to our valued clients about ENCON systems and our industry leading [service & support](#). Contact a Sales Engineer at 603-624-5110 for references or view case studies at www.evaporator.com/case-studies.



Industry Leading Service & Support



PROACTIVE STARTUP ASSISTANCE

After your order, a Service Engineer will be assigned to your account. They'll work with you to make sure everything is ready for installation. They will walk you through start up (on-site startup and training is also available).

FREE TECHNICAL SUPPORT FOR THE LIFE OF YOUR EVAPORATOR

Getting help and/or advice shouldn't require a contract. ENCON has offered free and unlimited remote support for over a quarter century. On-site service is also available. ENCON also maintains a complete record of service work and interactions regarding the evaporator.



FREE APPLICATION FEASIBILITY REPORT

The centerpiece of our consultative approach is our complimentary bench scale analysis of your waste or process stream. This free analysis determines:

- How appropriate the stream is for evaporation
- Estimated reduction percentage
- Recommended materials of construction
- Recommended operating procedures



To find out more, ask your ENCON Sales Engineer, give us a call at 603-624-5110, or email sales@evaporator.com.



PREMIUM SERVICE OFFERINGS

In addition to our industry leading standard support, ENCON offers a variety of premium offerings such as scheduled visits by ENCON Service Engineers. They will review and tune your evaporator, assess the unit's condition, assess the wastewater process, make suggestions for improving results, and conduct training.

FREE STANDARD LAB ANALYSIS OF YOUR WASTE STREAM FOR THE LIFE OF YOUR EVAPORATOR

Want to consider a new waste or process stream for evaporation? Not sure if your waste stream has changed? ENCON will analyze a sample of your stream, compare it to previous tests and make recommendations on any necessary process changes.



SPECIFICATIONS

	Model DE-2	Model DE-4
Electric Requirements - V/PH/Hz (FLA)	480V/3Ph/9.7	480V/3Ph/19
	240V/3Ph/19.5	240V/3Ph/38
Available Non-Standard Voltages	208V/3Ph, 220V/1PH, 575V/3PH, 380V/3PH, 400V/3PH, more	208V/3Ph, 220V/1PH, 575V/3PH, 380V/3PH, 400V/3PH, more
Evaporation Rate	200 gallons per 5-day week*	400 gallons per 5-day week*
Heater Description	(Qty 6) 1.2kw low watt density elements	(Qty 12) 1.2kw low watt density elements
Evaporator Dimensions	42" diameter x 64" high (at exhaust stack outlet)	
Evaporator Weight (Empty)	412lbs	
Exhaust Stack	5" diameter insulated exhaust	
Volumetric Airflow	120 CFM at 70°F and 0.2 inches of water column	
55 Gallon Drum Requirement	Open top, steel with 21-23" diameter x 34-36" high (supplied by Customer)	
*Evaporation rate is based on tap water and auto-fill operation. Actual rate may vary based on waste stream		
Materials of Construction	<u>Skins & Lids:</u> Polished 304 Stainless Steel, 18 ga. <u>Mist Eliminator Pad:</u> 316L Stainless Steel. <u>Insulation:</u> 4" Insulation in Walls, 2" Insulation in Lids.	
Controls Inputs	316 Stainless Steel Low Level Shut-Off, 316 Stainless Steel High Level Shut-Off (With Auto-Fill Option: DE-4: Standard, DE2: optional), Hastelloy C Type J Thermocouple, Cycle Timer	
Control Panel	NEMA 12 & 13 Relay Control Panel, Digital Temperature Display, Cycle Time Digital Display, Selector Switch (1) – Main Power, Warning Lights (2) – High Temperature & Low Level, Indicators (2) – Main Power & Heaters	
Quality	<u>I/O Simulation:</u> All I/O and Controls are Fully Tested to Ensure Accuracy/Functionality. <u>Warranty:</u> One Year for Parts and Workmanship Issues.	

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