

vacuum heat pump EVAPORATORS

any

EV - SERIES

VACUUM HEAT PUMP EVAPORATOR

EV vacuum evaporators series **are used for the industrial waste solution treatment**, **to recover the water content and reduce the amount of disposable waste.** The principle of the low temperature vacuum distillation allows to obtain an optimal separation of the water from the pollutants contained and to **recover 90% of distilled water**. SAITA evaporators boil acqueous solutions at a **temperature of 32-35°C**. Heat pump technology is used to bring the waste solution to the boiling point and to condensate the steam in order to collect distilled water.

ADVANTAGES:

- Reduction of waste disposals
- Higher distilled water quality, reusable in production
- Savings on water consumption
- Reduction on logistic costs for disposals
- Automatic functioning 24h/24h
- Zero emission

INDUSTRIAL APPLICATIONS:

- Surface treatments and electroplating
- ► Aluminium die-casting
- Powder coating
- Metalworking
- Pharmaceutical and chemical industry
- ► Electronic and semiconductor





- 1 Pure distillate
- 2 Concentrate waste

CASE STUDIES:

- Treatment of chromium static rinses
- Demineralized waste regeneration treatment
- Wastewater from cleaning and washing lines
- Wastewater from powder coating cleaning tunnel
- Recycling of distilled water from die-casting lubricant
- Oil emulsion treatment

CHARACTERISTICS

The main characteristic of the EV evaporators series is a **boiling chamber** made of stainless steel or either special alloys depending on the solution that has to be treated.

The boiling chamber is made of a lower part inside which takes place the heating phase of the solution, and where it is located an heat exchanger immersed in the liquid.

In the upper part of the boiler occurs the condensation of the steam generated by the boiling process afterward a **droplet separator and a coil heat exchanger** produce the steam condensation.

The vacuum created in the boiling chamber allows to refill the initial load of the solution during the processing cycle, to extract the condensed distillate and to load the antifoam solution.

The heat pump uses **refrigerant gas** which is the primary fluid for heating the wastewater and for the condensation of the distilled water.

S.A.I.T.A. PRODUCES **STANDARD AND CUSTOMIZED MODELS** ACCORDING TO THE CUSTOMER'S NEEDS

THE EV SERIES EVAPORATORS ARE COMPLETE WITH:

- Touch screen panel
- SAITA's automation software
- Semi-hermetic compressor
- Digital and analogic measurement instruments

- Level regulators and alarms
- Automatic loading of inlet solution
- Automatic anti-foam loading
- Boiling chamber cleaning cycle
- Pneumatic pump for concentrate discharge.



SUPPLY

The operation of the vacuum evaporators in heat pump only requires electrical power and compressed air. Energy consumption on average of 0.15 kWh / liter of distillate produced.



Evaporators production in our premises



Distillation test in our laboratory

MODELS	EV30	EV50	EV100	EV150	EV200	EV300	EV400
Flow-rate of distillate lt/h	30	50	100	150	200	300	400
Power absorbed kW	8	14	21	24	36	56	65
Boiling temperature °C	32-35	32-35	32-35	32-35	32-35	32-35	32-35
Concentration ratio	1/5 : 1/15	1/5 : 1/15	1/5 : 1/15	1/5 : 1/15	1/5 : 1/15	1/5 : 1/15	1/5 : 1/15
Vacuum degree	-715 mmHg						
Refrigerant gas	R407c/R134a						
Voltage	400 Volt / 50 Hz						
Length mm	2200	2200	2300	3000	3100	2200	3100
Width mm	1200	1200	1600	1600	1700	1700	1700
Height mm	2650	2650	2900	3100	3100	3200	3200

MATERIALS USED:

- Stainless steel AISI304 or AISI316
- Superduplex SAF2507
- Sanicro 28
- Titanium
- Steel with internal lining in Halar[®]

COMPANY PROFILE

S.A.I.T.A. srl was established in 1980, designs and produces industrial water treatment plants.

SAITA has concentrated its efforts to develope the design and manufacturing of recycle water treatment plants in order to encourage the integration of the production cycle with the waste treatment system.



Via Pierobon, 2 35010 Limena (PD) Tel. +39 049 8840172 Fax +39 049 767144 info@saitaimpianti.it www.saitaimpianti.com