

its

C&G
DEPURAZIONE INDUSTRIALE

VACUUM EVAPORATOR



Your Solution for High Strength Industrial Wastewater

Treatment & Disposal Made Easy & Economical by C&G Vacuum Evaporator!

The treatment and disposal of high strength industrial wastewater using conventional process is not feasible from the financial standpoint. In many cases, evaporation process is viable to achieve a substantial reduction of wastewater volume for direct disposal and in certain applications, to recover the dissolved inorganic salts.

Conventional evaporation systems involve complex installation and high energy cost which make the process not feasible for small industries. The principle of C&G evaporation system is based on the combination of two innovative technologies – HEAT PUMP and BOILING UNDER VACUUM giving the advantage of energy saving and simple installation. With 30 years of experience, C&G has installed more than 800 machines all over the world.



How It Works

Air inside the evaporation and condensate chamber is drawn by a high pressure pump via an ejector. This ejector creates a pressure as low as negative 920-950 mbar inside the chamber and at this pressure, water will boil at 30-40°C.

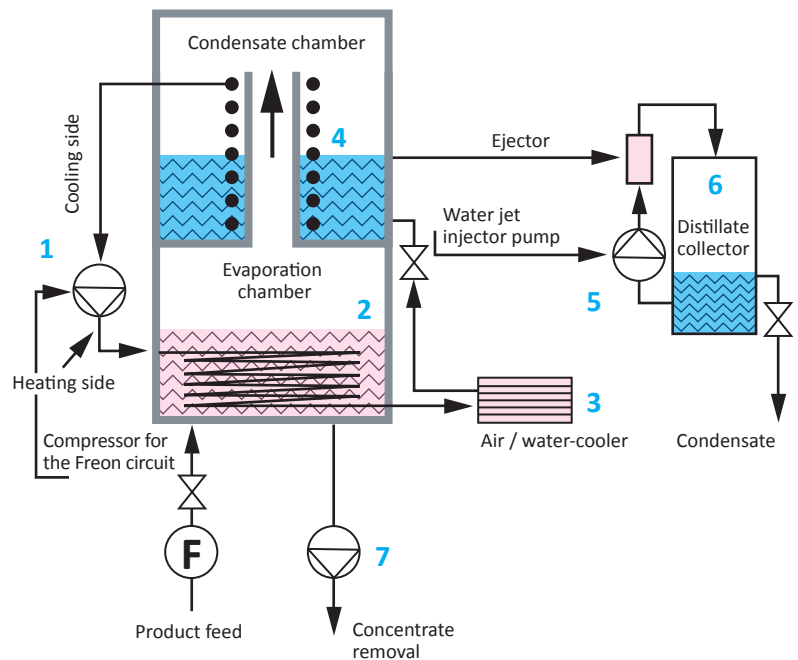
The heating circuit is driven by a compressor (1) which compresses the refrigerant to 60-70°C in the heating coil (2). The heat energy is then transferred to the feed liquid causing it to evaporate. The Freon then passes through an air / water cooler (3) and vaporizes via thermostatic expansion valve into condensation coil (4). When the steam from evaporation chamber contacts with the condensation coil, it will transfer the heat energy to the Freon and this reclaimed energy is used again for the heating of feed liquid.

The condensate at the bottom of condensation chamber is extracted by high pressure pump (5) via an ejector and accumulates in the distillate collector (6). The residue / concentrate is automatically transferred by residue pump (7) or removed manually once the required concentration has been reached.

Advantages of C&G Evaporator



- Extremely compact system – Saving in space required
- Fully automatic working cycle – controlled by PLC
- Low energy consumption – boiling under vacuum
- No fume / air pollution – closed system
- No chemical required – saving in treatment cost
- Less sludge produced – saving in sludge disposal cost
- Physical separation process – recycling of concentrate / distillate
- Custom design – for various medium and application
- Simple working concept – minimum troubleshooting / maintenance
- Safety / Protection components – for safe operation
- Quick ROI – pay back of investment can be <15 months



System Consists of :

- One unit of heat pump / compressor
- One unit of high pressure pump
- One unit of evaporation chamber
- One unit of condensate chamber
- One set of distillate collector
- One unit of air / water heat exchanger
- One set of safety component
- One unit of PLC controlled mimic panel

Vacuum Concentrator

- Model V-NT with immersed heating oil (heat exchanger)
- Evaporation and condensation energy generated by refrigerant gas / heat pump
- Vertical boiling and condensation chamber made of AISI 316 stainless steel
- Completely dismantle bottom with AISI 316 flanges
- AISI 316 stainless steel heating and cooling coil
- Skid mounted on AISI 304 stainless steel hollow section framework
- Inspection windows made of Pyrex tempered glass
- IP 55 panel with PLC and SYNO-MIMIC
- Antifoam dosing pump
- Safety features for over pressure protection
- Special SANICRO 28 Version and other material available upon request



Model V-NT	Distillate (Liter/hr.)	Input Power (kW)	Size (approx.) (L X D X H in mm)
150	6.25	1.3	1200 X 900 X 2100
250	10.4	2.1	1400 X 900 X 2100
350	14.6	2.9	1800 X 900 X 2100
500	20.8	4.2	2200 X 1100 X 2000
750	31.2	6.3	2200 X 1100 X 2000
1,000	41.6	8.4	2500 X 1200 X 2200
1,500	62.5	12.0	2500 X 1200 X 2200
2,000	83.3	16.0	3000 X 1300 X 2400
3,500	146	30.0	3000 X 1800 X 2600
5,000	209	42.0	3000 X 1800 X 2600
7,000	292	55.0	3600 X 2200 X 3900
10,000	417	80.0	4800 X 2100 X 3700
12,000	500	100.0	5600 X 2100 X 4000
18,000	750	150.0	6300 X 2200 X 4000
20,000	833	160.0	8300 X 3000 X 4200
24,000	1,000	200.0	8300 X 3000 X 4200

**Actual power consumption depends on type of liquid to be processed and ambient temperature.*



All units by C&G conforms to "Machinery directives" 89/392 CEE

Vacuum Dryer

- Model ES for forced concentration / drying
- Evaporation and condensation energy generated by refrigerant gas / heat pump
- Vertical condensation chamber made of AISI 304 stainless steel
- Horizontal AISI 316 boiling chamber with inverted saddle exchanger
- AISI 316 stainless steel cooling oil
- Skid mounted on AISI 304 stainless steel hollow section frame work
- IP 55 panel with PLC and SYNO-MIMIC
- Antifoam dosing pump
- Safety features for over pressure protection
- Special SANICRO 28 Version and other material available upon request



Model ES	Distillate (Liter/hr.)	Input Power (kW)	Size (approx.) (L X D X H in mm)
100	4.2	2.8	1200 X 900 X 1550
250	10.4	4.0	1700 X 1150 X 2000
350	14.6	6.7	1500 X 1250 X 2100
500	20.8	7.4	1500 X 1600 X 2400
750	31.2	12.4	1700 X 1700 X 2400
1,000	41.7	14.3	2000 X 2000 X 2400

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Application

Industry / Area	Function
Metal Finishing	Recovering metals (chromium, nickel, copper, gold and palladium) Concentrating exhausted baths (degreasing, picking) Concentrating resin plant regeneration elutes
Mechanical Processing	Concentrating oily emulsions / used coolant
Painting	Concentrating paint booth waters or recovery of solvents
Graphic Arts Photography	Concentrating developing and fixing baths Recovering inks from washing water
Pharmaceuticals	Concentrating process and reactor washing waste water
Jewellers	Recovering gold from concentrates
Detergents Plant	Separation of detergents / water
Food / Confectionery	Recovering and concentrating sugar solutions
Reject from RO / NF / UF	Recovery or concentration of reject stream
Nutraceuticals	Concentration of active ingredients / natural flavour

C&G is an ISO 9001 certified company



For further information, please contact:

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