



C&G
EVAPORATOR

BUSINESS CASE | PHARMACEUTICAL SPAIN

The solution for safe and sustainable treatment

C&G Evaporator

*a brand of C&G
Depurazione Industriale*

Via I° Maggio, snc
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WWW.CGEVAPORATOR.COM

Wastewater treatment
of a pharmaceutical company

WARNING
DO NOT OPERATE THE
EQUIPMENT WITHOUT
THE APPROPRIATE
TRAINING TO AVOID
DANGEROUS
ACCIDENTS



BUSINESS CASE

Wastewater treatment of a pharmaceutical company

CUSTOMER

The client is a world leader in the pharmaceutical industry, producing chemicals for the pharmaceutical sector in Spain.

www.cgevaporator.com

Pharmaceutical Spain

The solution for safe and sustainable treatment

OBJECTIVES

To verify that vacuum evaporation with heat pump technology can treat this type of effluent, especially for one of the possible products, raloxifene hydrochloride, whose discharge limit to the environment is 250 mg/day. The customer needed to ensure the quality of the distillate discharged to the environment and reduce overall energy costs.

RESULTS



SAVING



CIRCULARITY



SUSTAINABILITY



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01. **Opportunity**

The customer was using an atmospheric evaporator that had excessive energy costs and limited volume for treatment capacity. There was no guarantee on the quality of the distillate discharged into the environment.



02. Project

Pharmaceutical Spain The solution for safe and sustainable treatment

- Sample analysis and vacuum evaporation tests in C&G laboratories, experimenting both with and without initial sample neutralization.
- Feasibility study of a project including the C&G V-NT 12000 vacuum evaporator with the base and the lower heating coil made of a special SAF stainless steel alloy.
- Introduction of additional safety controls with 2 carbon filters, which take into account the possible presence of raloxifene hydrochloride, and a conductivity meter installed on the distillate.
- Automatic return of the distillate to the inlet storage tank if the conductivity read exceeds a preset value.



Pharmaceutical Spain

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To address the issues of high costs, low treatment efficiency and uncertain distillate quality, a C&G V-NT 12000 vacuum evaporator was installed. This system was designed with special materials, including a base and heating coil in SAF stainless steel, to ensure high chemical resistance.

The plant has also been equipped with double carbon filters to remove impurities and a conductivity meter, which constantly monitors the quality of the distillate. An automatic recirculation system ensures that the distillate is reused or reintroduced into the process only if it complies with the pre-established parameters, ensuring maximum efficiency and environmental safety.

03.
Solution

The installation of the V-NT 12000 vacuum evaporator has allowed us to obtain significant results in terms of treatment efficiency, distillate quality and reduction of operating costs.



MAXIMUM REDUCTION
OF COD



INCOMING WASTEWATER

Appearance: cloudy
Color: yellowish
PH: 2.6
COD: 2880 mg/L
Conductivity: 1597 $\mu\text{s}/\text{cm}$



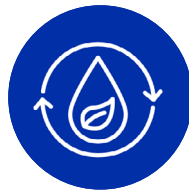
DISTILLATED PRODUCED

Appearance: clear
Color: colorless
PH: 8.3
COD: 7 mg/L (after carbon filter 0 mg/L)
Conductivity: 45 $\mu\text{s}/\text{cm}$

04. Analysis of the results



SAVING



CIRCULARITY



SUSTAINABILITY

High concentration capacity, thanks to the heat pump technology, the wastewater has been concentrated over 20 times, drastically reducing the volume of waste to be disposed of and optimizing the management of pharmaceutical wastewater.

Cost optimisation and process simplification, the new system eliminated the need for neutralisation pre-treatment, reducing chemical and operating costs.

04. Analysis of the results

High quality distillate, compliant with environmental regulations

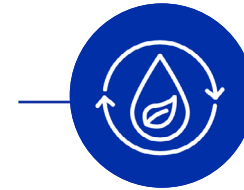


The system ensured effective transformation of the incoming liquid:

The **pH** of the distillate was stabilized at **8.3**, from an initial value of 2.6, making it suitable for discharge.

The **COD** (Chemical Oxygen Demand) went from 2880 mg/L to **7 mg/L** and, thanks to the use of the **carbon filter**, it was **reduced to 0 mg/L**, reducing the polluting load to a minimum.

The **electrical conductivity** dropped from 1597 $\mu\text{s}/\text{cm}$ to **45 $\mu\text{s}/\text{cm}$** , confirming the high purity of the final distillate.



The resulting distillate was made suitable for reuse or disposal, reducing disposal costs and increasing the sustainability of the process.



C&G
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VACUUM EVAPORATORS

**Start reducing
operating costs
today towards a
more sustainable
future.**

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