

## Description

A single stage, steam heated, vertical tube, natural circulation Vacuum Evaporation System.

## Application

Concentration of water / PAG (Phenyl Acetyl Glutamine) solution used to synthesize antineoplastons, non-toxic, antitumor agents that appear to reprogram cancer cells to revert to normal cells.

## Overview

The illustrated evaporator is the second DDPS system applied by the client for this application. This unit features push-button start/stop, PLC Controlled, continuous separation and discharge of solvent (usually water) and periodic discharge of concentrate at a prescribed density. The design was developed for the metal finishing industry in the early 70's for point-source recovery of corrosive plating bath drag-out chemistries and associated rinse waters for recycle to the finishing process. It is easily adapted to other applications.

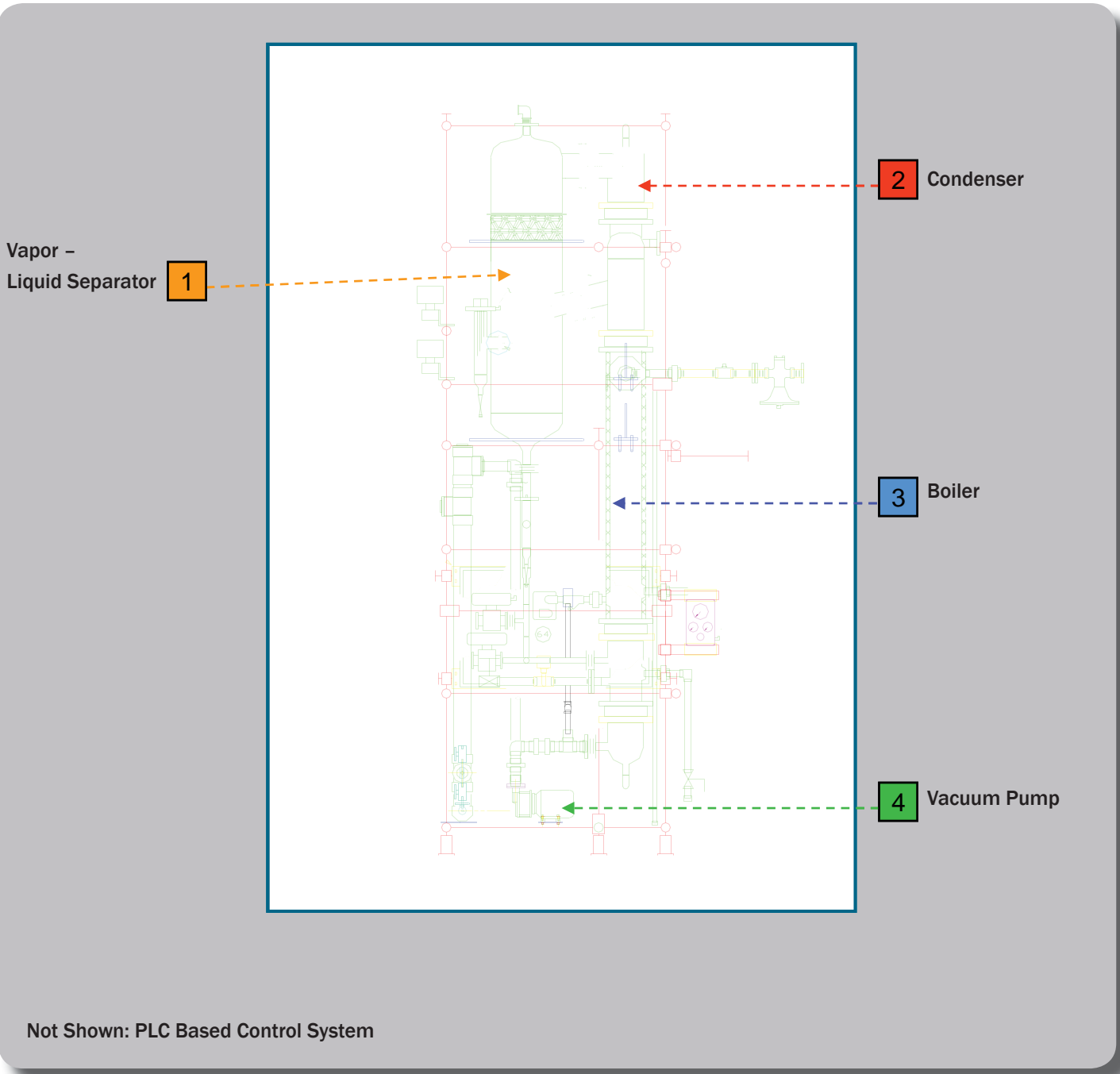
### Specifications

<i>Evaporation Rate:</i>	90 Gal/h Nominal*
<i>Operating Temperature:</i>	170 – 190 °F
<i>Operating Vacuum:</i>	17.7 – 10.9 In. Hg Vacuum
<i>Heat Energy Required:</i>	900,000 Btu/h, or 900 Lb/h at 10-12 Psig Clean, Saturated Steam, or 26.0 BHP
<i>Cooling Water:</i>	61 US GPM at 85 °F for 25 °F Rise
<i>Electric Power:</i>	230/460, 3 phase, 60 Hz (Panel 10A @ 110V) TCL /NOL; 3.4 / 2.4 kW
<i>Materials of Construction:</i>	Titanium Boiler & Condenser Tubes, Steel, Alumina Ceramic, PTFE, Borosilicate Process Glass, Galvanized Tubular Steel Support Structure.
<i>Controls:</i>	Push Button Start / Stop, PLC Based Electro-pneumatic Controls in a NEMA 4/12 Enclosure, Fully Alarmed with Indicating Key Pad and Internal Lockout. Includes Disconnect & Starter, 460 /110V Step-down Transformer for single 460V Electric Power Drop and a remote set point Steam Pressure Regulator.
<i>Dimensions:</i>	6' 2" x 4' 7" x 18' 6" H
<i>Operating Weight:</i>	2,300 lb.

### Scope of Supply

- Vertical, Steel Shell & Titanium Tubed, Low Pressure, Steam Heated Reboiler
- Vertical, Water Cooled, Steel Shell & Titanium Tubed Condenser
- Glass Vapor / Liquid Separation Chamber with Entrainment Pad
- Vacuum System: Stainless Liquid Ring Pump with Seal Water Reservoir
- Push Button Operated, PLC Based, Fully Alarmed, Electro-pneumatic Controls; Glass Intrapiping; Galvanized Steel Support Structure; Assembled, Wired & Tested.

\*Evaporation rate is measured using city water and clean boiler tubes.



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