

# PRODUCT PROFILE

## QVF VACUUM EVAPORATOR SYSTEM

### AMMONIUM SULFATE

### EVAPORATOR/CONCENTRATOR

#### Description

A single stage, hot water heated, vertical tube, natural circulation, Vacuum Evaporator System designed for outdoor operation under 90 MPH wind loads, zone 3 seismic stresses and possible atmospheric icing conditions.

#### Application

The separation and concentration from 4.0 wt.% - 40 wt.% of a relatively pure, single salt stream of (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> for local sale, and the recovery of associated water of dilution for internal process recycle, from a waste stream generated by a semiconductor manufacturing waste water treatment process.

#### Overview

A highly customized, fully automatic, semi-continuous, DDPS Vacuum Evaporator System. This unit features Push-button Start / Stop, PLC Controlled, continuous separation and discharge of water and periodic, batch discharge of concentrated salt brine at a prescribed density. The careful selection of glass reinforced plastic, reactive metals and alloys combined with a heavy duty, 304 Stainless Steel structure assure long and trouble free chemical service in a tough, north coast, outdoor environment.

#### Specifications

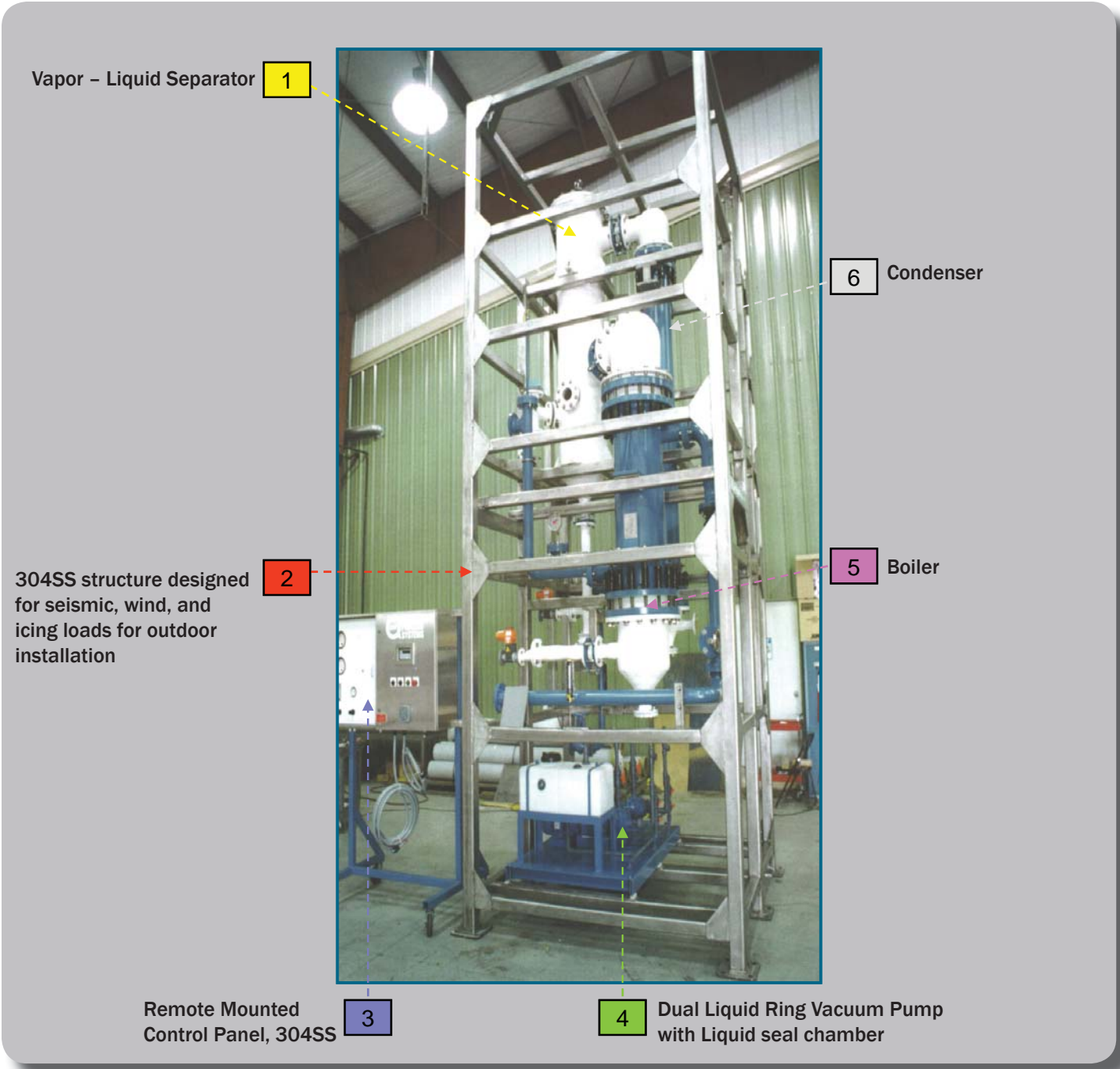
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|-----------------------------------|--|
| <i>Evaporation Rate:</i>          | 35 – 50 GAL/HR NOMINAL*  |
| <i>Operating Temperature:</i>     | 120 – 130 °F   |
| <i>Operating Vacuum:</i>          | 26.5 – 25.4 In. Hg Vacuum  |
| <i>Heat Energy Required:</i>      | 500,000 Btu/Hr. @ 185 °F (Hot water control system by customer).   |
| <i>Cooling Water:</i>             | 44 GPM @ 85 °F for a 15 °F Rise  |
| <i>Materials of Construction:</i> | Titanium, 304 St. St., FRP and PTFE  |
| <i>Controls:</i>                  | Push Button Operated, Start / Stop, SLC-504 PLC Based Electro-pneumatic, SS NEMA-4X Control Panel, Fully Alarmed with Indicating Key Pad and Internal Lock out. Includes Disconnect & Starter, 460 / 110V Step-down Transformer for single 460V Electric Power Drop. |
| <i>Dimensions:</i>                | 7' 4"L x 7' 7"W x 18' 0" H   |
| <i>Operating Weight:</i>          | 5,000 lb.  |

#### Scope of Supply

- Vertical, Steel Shell & Titanium Tubed, Hot Water Heated Reboiler
- Vertical, Water Cooled Steel Shell and SS Tubed Condenser
- FRP Vapor/Liquid Separation Chamber with Entrainment Pad
- Dual Vacuum System: Alloy 20 with Sealant Recovery
- PLC Based, Push Button Operated, Alarmed, Automatic Control System
- 304 Stainless Steel, Tubular Structure: 90 MPH Wind, Zone-3 Seismic, Ice Loads
- System Pre-assembled, Piped, Wired & Electronically Tested

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

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