

# 4EP-4EG TREATMENT



## OVERVIEW

Brettanomyces (“Brett”) yeast produces two molecules during its lifespan in wine: 4-Ethylphenol (4EP) and 4-Ethylguaiacol (4EG). Much of the year 2003 was spent in the Winetech lab as we searched for an adequate resin to catch the Brett off-flavors from wine and remove 4EP/4EG—our resultant discovery solidified our standing as an industry leader in wine treatment solutions.

## PROCESS

Similar to the use of reverse osmosis (RO) in VA removal, the 4EP/4EG removal system uses loose RO to separate 4EP and 4EG into the permeate stream. The permeate stream is then treated separately to remove Brett off-flavors without damaging pigmented retentate, which is responsible for wines’ complex characteristics. After treatment, the permeate is blended back into the retentate.\*

## EQUIPMENT

Winetech’s system is a combination of loose RO membranes and absorbent resins.

**QUALITY CONTROL:** Pre- and post-treatment lab analysis and sensory evaluation.

*\*4EP/4EG removal is not filtration. We remove off-flavors, not the Brettanomyces that cause them.*

*Wine needs to be sterile filtered to remove the cause of the problem.*



<b>EQUIPMENT</b>	<ul style="list-style-type: none"> <li>•Winetech Loose R.O. System with Ion Exchange Resins</li> <li>•Membranes: FDA approved, thin-film tangential membrane</li> <li>•Resins: FDA approved, odorless and flavorless</li> </ul>
<b>APPLICATIONS</b>	<ul style="list-style-type: none"> <li>•Removal of Brettanomyces off-flavors (4EP-4EG) from wine</li> </ul>
<b>COMPLIANCE</b>	<ul style="list-style-type: none"> <li>•All components, materials and chemicals are FDA approved</li> <li>•TTB compliant</li> </ul>
<b>PROCESS</b>	<ul style="list-style-type: none"> <li>•Average removal: 20% per pass</li> <li>•Throughput: 350 - 600 gallons/hour</li> <li>•Wine temperature: 55°- 65° F (13°-18° C)</li> <li>•Max working pressure: 740 PSI (50 bar)</li> <li>•Average wine loss: 0.5% - 3% (small lots)</li> <li>•Cleaning agent: sodium / potassium hydroxide</li> <li>•All equipment is sanitized after each use</li> </ul>
<b>SERVICE REQUIREMENTS</b>	<ul style="list-style-type: none"> <li>•<b>Analyses: 4EP 4EG levels no older than one week</b></li> <li>•<b>Power:</b> Dedicated receptacle within 100 feet <ul style="list-style-type: none"> <li>•220 Volts tri-phase 30 Amp</li> <li>•480 Volts tri-phase 15 Amp</li> </ul> </li> <li>•<b>Receptacle:</b> Hubbell style three poles + ground 30A 480V / 60A 480V / 60A 240V NO HARD WIRING will be done by our Filter Technicians. We can sell the receptacle to be installed by your contractor. We will not perform the service without the necessary receptacle in place</li> <li>•<b>Water:</b> Within 70 feet with 3/4" garden hose fitting</li> <li>•<b>Tanks:</b> Wine tank within 70' with Tri Clover fitting (above ground level)</li> <li>•<b>Hoses:</b> 1 ½" or 2", sanitized, enough to reach the tank</li> </ul>
<b>WINE REQUIREMENTS</b>	<ul style="list-style-type: none"> <li>•<b>Wine:</b> Racked, blended, in tank</li> <li>•<b>Lot size:</b> Minimum 500 gallons</li> <li>•<b>Wine temperature:</b> Minimum 55° - 65° F (13° - 18°C)</li> <li>•<b>Brix:</b> Max 10°</li> <li>•<b>Note:</b> No CO2, clarifying products, bentonite, seeds or pomace</li> <li>•<b>Turbidity:</b> Less than 200 NTU</li> </ul> <p><b>CAUTION:</b> Maintain free SO2 level between 20 - 30 mg/l before and after treatment</p> <p><b>THIS TREATMENT IS NOT A FILTRATION:</b> You need to filter the wine to remove the brettanomyces responsible for the off flavors</p> <p><b>Should these requirements not be met at the time of service, Winetech reserves the right to reschedule, revise pricing and/or cancel the service</b></p>