



## MEMBRANE-BASED TARTRATE STABILIZATION OF WINE

Electrodialysis: INRA/EURODIA Patent



96%  
Energy  
Savings



Fast &  
Economical



100%  
reliable



100%  
controlled



100%  
quality



Zero  
additives



Zero  
loss of wine





# STARS - Guaranteed Tartrate Stabilization, without Additives Recognized and Adapted Worldwide

## AN EXCLUSIVE SUSTAINABLE PROCESS: OPTIMIZED TARTRATE STABILIZATION

OENODIA's STARS technology guarantees immediate and permanent wine tartrate stability, without using additives and without adverse effects on a wine's sensory characteristics. This is the result of OENODIA developing an innovative and high-performance eco-process: Tartrate stabilization using STARS/Electrodialysis. OENODIA is currently the only company in the world able to successfully apply this process to wine. The result is a 100% reliable Tartrate stabilization process, guaranteeing stability down to  $-4^{\circ}\text{C}$  /  $24.8^{\circ}\text{F}$  over at least 6 days, regardless of storage conditions, color and or quality of the wine.



## SUSTAINABLE AND ECONOMICAL:

Additive-free, STARS is based on a truly Sustainable Technology: the energy consumption is up to 96% less than a cold treatment with only 0.01 kWh per gallon. In addition, by improving its water recovery with the use of a better Reverse Osmosis System, STARS water consumption can be comparable to the amount generated by a cold stabulation. Economical: in addition to the savings on the electrical bill STARS eliminates the totality of the wine loss (can be up to 2% of the total wine volume stabilized by the cold) which generates additional income. Competitive: compared to similar cold treatment, STARS reduces stabilization time by days or weeks and facilitates the tank management. Guaranteed Stability: Facilitates export sales by guaranteeing buyers/importers a fully stabilized product. It offers a high degree of flexibility, enabling fast continuous treatments. Most important for the winemaker, it preserves the natural characteristics of their wines.

## THE KEY BENEFITS OF TARTRATE STABILIZATION VIA STARS

- **Zero Wine Loss:** save up to 2% of total wine volume stabilized
- **Zero Flavor Impact:** confirmed by over 165 global customers
- **Zero Additives:** additive free Tartrate Stabilization, no addition of chemicals
- **96% Energy Savings:** save energy and costs
- **100% Guaranteed:** immediate and reliable Tartrate Stabilization
- **100% Flexibility:** maximum production flexibility and ease of use
- **Wine Just In Time -** Crossflow, Tartrate Stabilize and Bottle immediately
- **Exclusive technology**



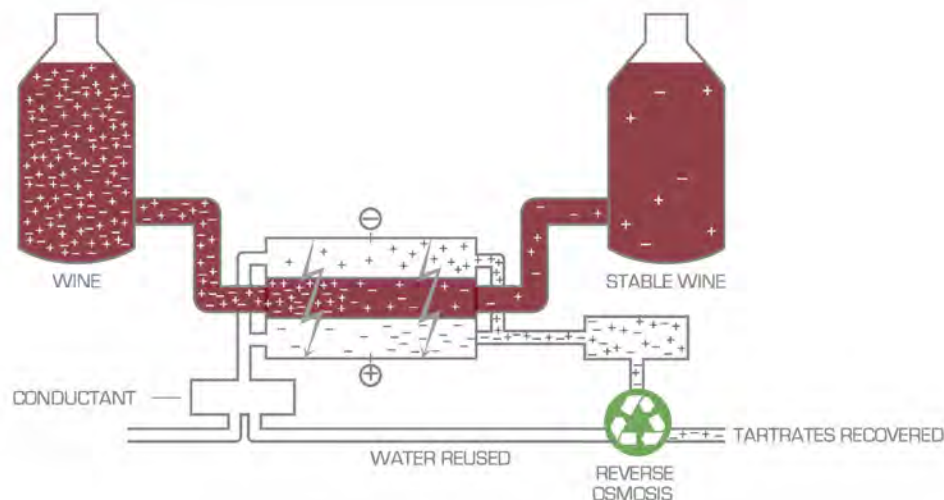
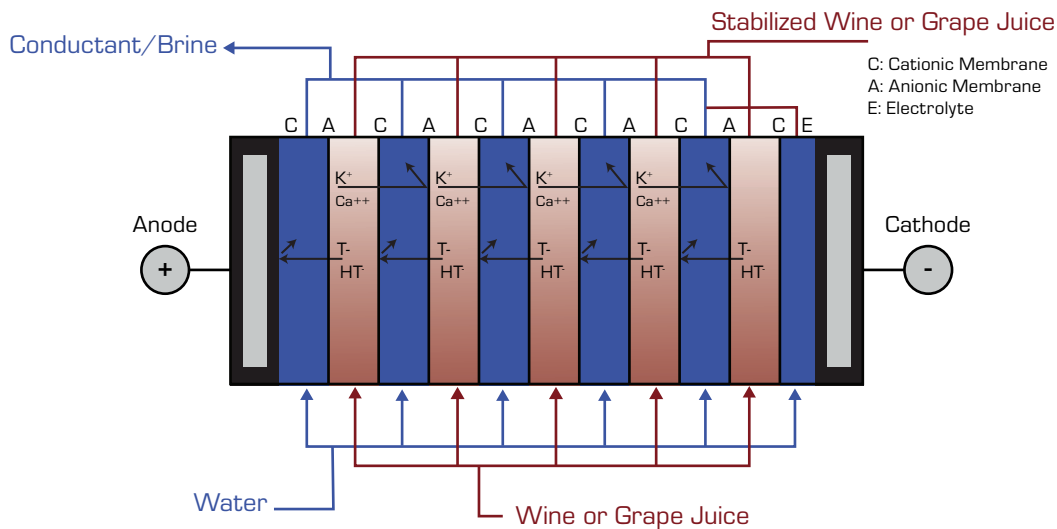


# STARS - Zero Additives - 100% Quality

## How Does It Work?

The principle is simple: for tartrate stabilization, a filter press module comprising a large number of parallel mounted cells is used. The even compartments receive the wine and the odd compartments the water. The two fluids never come into contact, but the membranes allow the passage of ions between them. "C,ationic" membranes [which only allow the positive ions or "cations" to pass through] are alternated with "anionic" membranes [permeable to "anions" or negative ions]. The creation of a small electric field is all that is needed to facilitate this transfer. Potassium and calcium (cations), bitartrate and tartrate (anions), all of which are abundant in wine, are the first ions to be extracted and filtered out in the water circuit. The benefit of this process is that, by adjusting the intensity of the current, it is possible to regulate the process with extreme precision so as to remove just the right amount and thus prevent the formation of tartrate crystals. The appropriate treatment rate is determined using a device specially designed by Oenodia: The Stabilab™. This calculates the wine's instability based on conductivity.

## TARTRATE STABILIZATION via STARS





## STARS - Aligned for Absolute Success

A constellation of STARS equipment to meet your everyday needs

STARSSTAB	Gal/hr	Gal/Day
STARS 400	400	200 to 8,000
STARS 800	800	200 to 16,000
STARS 1200	1,200	400 to 24,000
STARS 1600	1,600	600 to 32,000
STARS 3200	3,200	1,300 to 62,000
STARS 4800	4,800	1,300 to 94,000
STARS 6400	6,400	1,300 to 125,000

250 Units worldwide representing 1.2 Billion bottles of wine stabilized per year



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