



# PROCESS MAP FOR

## 1 Water Polishing

To reduce the risk of particulate causing equipment failure or contaminating the final product, water used for amelioration, equipment washdown, and boiler feeding must be polished. The removal of chlorine is a critical step in preparing water for treatment. To remove the chlorine, use a PF-EG with carbon block elements. It is critical to filter particulate after the carbon block elements before using the water. Use a PF-EG housing and PP N elements to remove bulk particulate.

## 2 Bulk Steam Filtration

Because bacteria are introduced during the fermentation process, steam is an important part of winery sterilization. The first step in supplying your facility with quality steam is to use an entrainment separator to remove bulk particulate and excess moisture from the steam. To remove particulate and moisture, use an inverted P-EG housing, a 25 micron P-SWM element, and a steam trap. Filter the steam with a P-EG housing and a 5 micron P-GS element to achieve culinary grade steam.

## 3 SIP and CIP

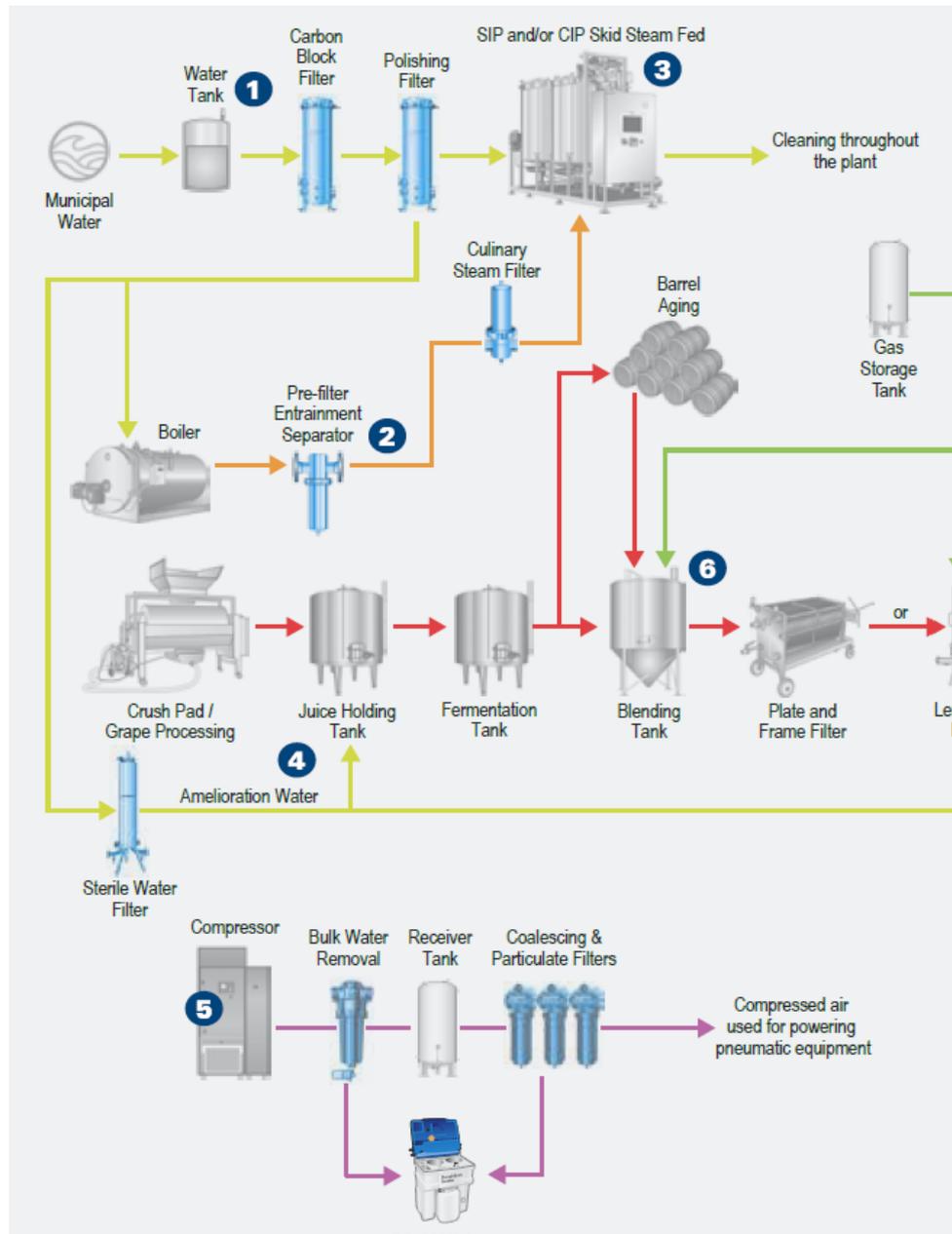
Larger wineries may have SIP and CIP systems that use steam or water to clean and sterilize equipment without disassembling it. Filtered water and steam are required to avoid product contamination and downtime on equipment.

## 4 Water Amelioration and Bottle Rinsing

Amelioration is the process of adding water to the juice prior to fermentation in order to improve the quality and flavor of the wine. Filter the amelioration water with a PF-EG housing and PES-WN 0.2 micron elements to reduce the risk of introducing unwanted microorganisms into the juice before fermentation. Another important step in reducing the presence of particulates and microorganisms in wine is bottle rinsing. Before filling and corking, rinse the bottle with sterile water to remove unwanted particulate and microorganisms. The use of sterile water also eliminates the need for caustic chemicals, and the flavor profile of the wine is unaffected. To achieve sterile water, use a Ultrafilter PF-EG sanitary liquid housing and a PES-WN 0.2 micron element.

## 5 Compressed Air Filtration

One of the most effective ways to prevent equipment breakdown and promote cleanliness throughout a process is to use clean, dry compressed air. On bottling lines, compressed air is used to power pneumatic tools and instrumentation. The Cyclone Separator and UltraPure housing combinations make it simple to remove oil, moisture, hydrocarbons, and particulate. The Oil/Water Separator separates the oil and condensate from the compressed air line and prepares it for environmentally safe disposal.



# THE WINE INDUSTRY

## 6 Wine Making

Every winery has its own method of producing wine. Winemakers frequently include residual sugars in the wine to create a slightly sweeter profile. Residual sugars can be added to the wine after fermentation by blending in reserve juice, or the fermentation process can be sped up by chilling the wine before all sugars are consumed by the yeast. The presence of residual sugar in the wine indicates the possibility of further fermentation. Wine pre-filtration and final filtration will help remove particulate matter and live yeast cultures that could spoil the wine.

## 7 Gas Filtration

Nitrogen is a common gas used in the winemaking process. Nitrogen is used to prevent wine oxidation by blanketing blending tanks and as a mechanism to remove oxygen from bottles prior to corking. Because these gases come into direct contact with the wine, sterile filtration is essential. PG-EG housing and P-SRF elements are recommended.

## 8 Wine Pre-filtration

When fermentation is finished, the wine can be transferred to barrels for barrel aging or blending tanks to rest. While a wine is being blended, juice or residual sugar can be added to enhance the aroma or flavor profile. Whether using a mobile bottling operation or bottled on-site, prefiltering is an important step in protecting the wine's flavor profile. The pre-filter will catch sediment and particulate matter, polishing the wine and keeping the final filter from becoming overburdened. There are several prefiltration technologies used, including plate and frame and lenticular filtration, which are known for oxidizing the wine or releasing diatomaceous earth into the wine. Ultrafilter recommends a PF-EG sanitary liquid housing and PP 100 N elements.

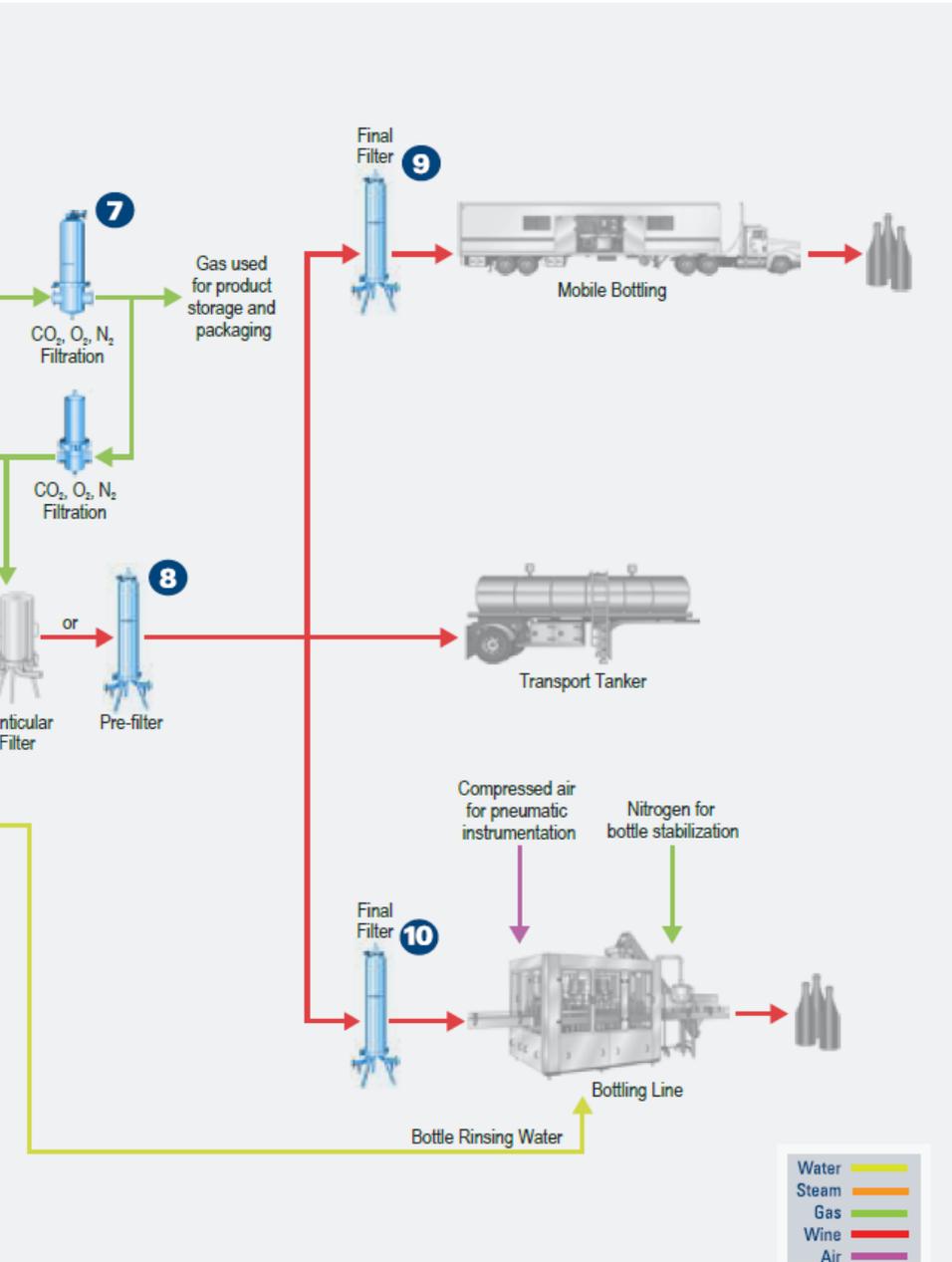
## 9 Mobile Bottling Final Filtration

Due to the significant investment required to bottle wine, many small to medium-sized wineries prefer to have their wine packaged by a mobile bottler. In general, the winemaker is responsible for completing the pre-filtration and determining the final filtration protocol for the mobile bottler. The final filter removes yeast cultures from the wine, preventing

secondary bottle fermentation. Secondary fermentation can contaminate the wine, push the corks out of the bottle, or cause the bottles to burst. Ultrafilter recommends a PF-EG sanitary liquid housing and a PES-BN A 0.45-micron element for wine final filtration.

## 10 Stationary Final Filtration

Many large wineries will have on-site bottling lines, giving them complete control over the final product. These large wineries may use cross flow filtration to clarify, stabilize, or concentrate the wine, but adding a sanitary PF-EG housing and a PES-BN A 0.45 micron element near the bottling line will match best practices and help ensure product quality and brand integrity.



# SUPERIOR FILTRATION MAXIMUM PROTECTION

## Hygienic Design according to EHEDG



- *Stainless steel end caps*



- *Binder Free*



- *FDA Compliant*



## Cost Saving Energy Efficiency



- *Nano Fiber filter medium*



- *70% more energy efficient*



- *Huge cost saving*



**NANO FIBER  
FILTER MEDIUM**

**QUALITY - RELIABILITY - EXPERIENCE**

### IMPORTANT NOTICE

Many factors beyond Ultrafilter's control can affect the use and performance of our products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, specifications, availability and data are subject to change without notice, and may vary by region or country.



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