

# Artenova & Montecchio Impruneta Terracotta Amphora Preparation:



## IMPORTANT:

1. Do not wash with water above 105 C or 221 F
2. Only use hot water incrementally for washing
3. Do not use a high pressure washing jet or barrel washing head
4. Do not use a percentage over 3% for the tartaric acid bath solutions
5. Montecchio's "cigar" amphorae can be stored horizontally on barrel racks for aging (do not stack other cigars or barrels on top) or can stand vertically for punch downs.
6. During fermentation or if the wine is not completely dry, do not close the amphora with an airtight silicone bung. Use a fermentation bung, glass colmatore or another pressure release system. If the amphora is completely air tight and there is any pressure, the path of least resistance will be found which often is where the stainless steel fittings touch the terracotta and leads to leaks and cracks.

## READ BEFORE USE:

### Artenova

Artenova is a family run business that specializes in the creation of winemaker friendly Impruneta terracotta amphora for winemaking and beverage alcohol. The company is located in Impruneta Tuscany which is the city that gave Impruneta Terracotta its name. Every two years, Artenova hosts the infamous cultural wine tasting event, "La Terracotta e il vino" where producers from everywhere in the world come to exhibit and taste wines made in amphora.

### Antica Fornace Montecchio

The Antica Fornace Montecchio has been producing terracotta goods since the 1700's and is still a family run farm, winery and business located in San Donato which is in the commune of Impruneta. Terracotta literally translates to baked earth and is made of four naturally occurring materials: **WATER - EARTH - AIR - FIRE**.

### Why clay from Impruneta is important

The commune of Impruneta represents a unique 200 square km region in the hillsides of Florence between the Ema and Greve rivers that contain open air mines where its clay and rocks contain high percentages of “galestro” which provide resistance to color and temperature change. Impruneta clay is also famous for being lower in metals especially iron in comparison to other clays.

## Critical steps in production

1. Sourcing of the clay
2. Mixing of the clay with water
3. Separation of rocks from the clay, then the pulverization of these rocks and their addition back to the clay
4. Method of production: Moulds vs. Columbine (building up amphorae by hand)
5. Cooking phases:
  - **Before Firing:** Amphora is placed in ventilated room where it enters at 80 C humidity and then needs to descend to 20 C humidity before firing
  - **Firing:** Temperatures reach over 1000 C in the ovens they are baked in with gradual temperature curves. Firing takes over 70 hours.
  - **Drying:** Once they are cool enough, amphorae are immersed in water which helps make them strong and robust

## How to prepare amphora before putting wine inside

**Once your terracotta amphora arrives, it is strongly advised to fill the amphorae up with a solution to saturate the terracotta.**

### 1. Tartaric acid solution bath

Fill the entire amphora up with a diluted solution of tartaric acid and let the amphora sit for 1-2 days. When you create a tartaric acid solution it is **VERY IMPORTANT** to mix the solution and then put it inside of the amphora. If you put tartaric acid in direct contact with terracotta, it will directly start eating away at the terracotta.

- i. Prepare a 3% tartaric acid solution of the amphora's total volume either inside of the amphora after it has been completely filled with water or in a separate vessel and then pump it inside of the amphora. Using the following table mix tartaric acid with neutral water at ambient temperature with a pH of 7 or close to 7.
- ii. After letting the amphora bathe for 1-2 days, empty and discard the tartaric acid solution, open all doors and valves and let the amphora air dry before using it for winemaking.
- iii. By using a tartaric acid solution, you are minimizing the risk of your wine increasing 0.2 in terms of ph.

<b>Amphora Type</b>	<b>Actual Capacity (L)</b>	<b>3% Tartaric Acid Amount (Kg)</b>
Montecchio Cigar	230	6.9
Montecchio Cigar	500	15
Artenova Jar	500	15
Montecchio Beehive	700	21
Artenova Jar	800	24
Montecchio Rotunda	1000	30

**or**

## **2. Neutral water bath**

- a.) Fill the amphora entirely with neutral water at ambient temperature and leave the amphora to sit for 1-2 days. When you empty the amphora, be sure to open all doors and valves to let the amphora completely air dry before using it for winemaking.
- b.) By using a water bath solution and not a tartaric acid solution, you risk increasing the ph of your wine by 0.2.

## **Where to place amphorae in cellar:**

Place your amphora in your cellar and not outdoors. Make sure the area is somewhat humid (like a cellar) and do not place the amphora in an area of your cellar where there are currents of air, drafts or right next to the entrance of the cellar.

## **How to clean amphora:**

To clean amphoras in between winemaking uses, do the following:

1. Clean amphora with hot neutral water under 105 C or 221 F at a low pressure
2. Either gradually increase the temperature of the water or only use warm water around

70 C - 80 C or 158 F - 176 F

3. Although the amphorae are designed so that if the stainless steel fittings expand, the terracotta will not crack, do not clean the lids of the amphorae excessively with hot water for preventative purposes
4. Do not use pressure washer or pump at high pressure for washing amphora
5. For cleaning the 230 L and 500 L cigars, you can keep the cigars on barrel racks or you can stand them up
6. If tartrates remain on walls, clean amphora with a 1.5% sodium bicarbonate solution. You can brush the side of the amphora with this solution. DO NOT USE HIGH PRESSURE
7. Before putting wine back inside, either give it another tartaric acid soak of 3% (most recommended) or a neutral water soak.
8. After washing, to make the amphora dry out faster and consequently prohibit the development of any mold or undesirable components, you can use a fan pointed towards the inside of the amphora. This will increase the rate of effective drying.

## **Q/A:**

### **1.) White solids that form outside of terracotta**

Terracotta clay is rich in salts such as sodium, calcium and other minerals. Depending on the ambient temperature and level of humidity in the air where the amphora is stationed, these salts have a tendency of exiting the terracotta over time and appearing on the surface of the inside and outside walls of the amphora.

### **2.) Odor of amphora when it is sealed and empty**

When amphoras are tested after production (filled up with neutral water with a ph of 7), left for several days full then emptied and air dried, some water vapor still remains inside of the terracotta because terracotta acts as an absorbent. When the containers are emptied, air dried and then sealed, some of the water that is still inside of the vessel condenses during the night and then evaporates during the day. If the amphora is sealed and is empty for a long period of time, it might give off a unique smell. To get rid of this smell, before using the amphora for winemaking, prepare it as mentioned above and then start using for winemaking. The odor will go away immediately.

### **3.) Vessels may weep over time**

Those with experience with terracotta mention that depending on the vessel, it may "weep" meaning that moisture oozes out of the terracotta over time. This has a lot to do with the porosity of the terracotta that is dependent on:

- How much water was added to the clay during mixing
- Uniformity of clay during unfired drying phase
- Temperature terracotta was cooked at temperature curve of the firing process.

If your amphora weeps at first, do not be alarmed. It will stop weeping over time.

#### **4.) Lots of wine loss when first filled with wine**

Due to Impruneta terracotta's large porosity of 10% (a standard oak barrel's porosity is around 5%), when first filled with wine, Impruneta terracotta amphora need to be topped up often but over time, the porosity decreases and the amphora need to be topped up significantly less.