
Ceramic and wine movements



Ceramic

Wine is born in terracotta

Ceramics are all objects made of clay that have undergone an irreversible physico-chemical transformation in the course of a baking at a more or less high temperature.

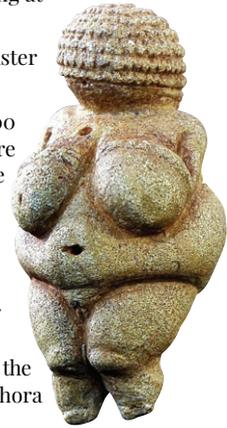
For its manufacture, ceramics requires the human being to master four essential elements: fire, earth (clay), water and air.

The mastery of fire by prehistoric man appeared around 400,000 before Christ. Terracotta was the first fire art to appear, even before glass and metal in prehistoric times, around 30,000 years before Christ.

The oldest pottery found that contained wine is said be 10,000 years (8,000 years before Christ) and comes from China.

In order to preserve food, drinks such as wine or beer, oils... ceramics were used.

During the Roman Empire, it was used widely in the wine trade in the form of Dolium for maturing and storage and in the form of amphora for transport.



Vin et Terre has chosen two natural clay-based ceramics developed over thousands of years : terracotta and stoneware.

Both ceramics have a long history of containing food products.

Over time, clay was not suitable for all applications.

Man has therefore improved the techniques of ceramics to have less porosity and better resistance to chemical and climatic aggression, by changing the clay composition and by increasing the baking temperatures.

- Stoneware appeared in China 1,500 years BC, characterised by a high presence of silica.
- Porcelain, also in China, 25 years AD, characterised by a high presence of kaolin
- Earthenware in Iraq 900 year AD.

Then, from the 19th century onwards, all industries manufactured ceramic to apply them to their needs (sanitary ware, pipes, bricks, electricity...) using new compound bodies.



The different ceramic bodies

POROUS	Opacity of the shard Earthy fracture High porosity Difficulty to match with glaze Glaze baking temperature < biscuit baking temperature Low deformation	TERRACOTTA	900 to 1050°C	8 to 20%	Yellowish Red Brown
		EARTHENWARE	1050 to 1200°C	5 to 12%	Red Pink Beige Ecu
VITREOUS	Low porosity Deformation during baking process Grilling and cutting break	STONEWARE	1100 to 1350°C	0 to 3%	Ecu Beige Brown
		PORCELAIN	1200 to 1400°C	0%	Ecu White
FIRECLAY	Temperature resistance Resistance to acid and base attacks Resistance to thermal shock	FIRECLAY	1400 to 2000°C	Various	Various
SPECIAL	Electrical resistance Stainless Steel Temperature and thermal shock resistance Chemical resistance	SPECIALS CERAMICS	1400 to 3000°C	Various	Various

The movement of wine in our stoneware jars

Study carried out by the Celsius laboratory

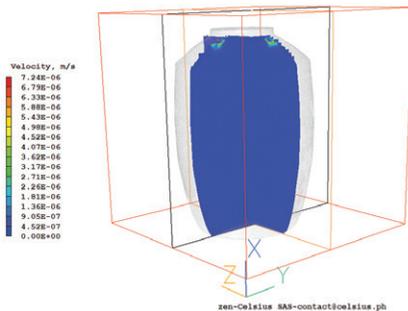
Thermal conductivity is the ability of a material to transmit heat to its contents. Conductivity of the different materials usually used to contain wine :

- Oak wood : 0.16
- Terracotta : 0.83
- Stoneware : 1.30
- Concrete : 2 to 5
- Stainless steel : 26

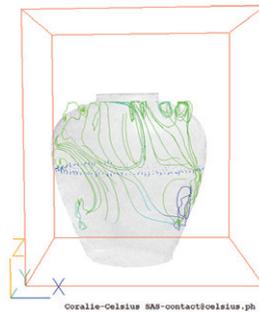
Stoneware is therefore a material with low conductivity, known as an insulator.

For the movement of a liquid,

- the temperature gradient is the energy of the movement
- gravity is the motor
- the shape is the accelerator or the brake.



The Zen vat has no curvature to give movement to the wine.



The Coralie vat makes it possible to have a still wine with very little movement, allowing for an oenological aspect.

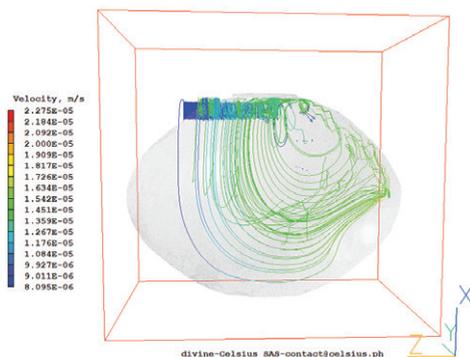
Vin et Terre vat shapes	Zen	Coralie	Ovo	Divine
Average velocity in cm/day caused by a thermal gradient of 3°C	8	43	60	130

For example, if we compare the movement of wine in the standing egg shape (Ovo) with other materials we would have in cm/day :

In oak wood : 17

Concrete : 52

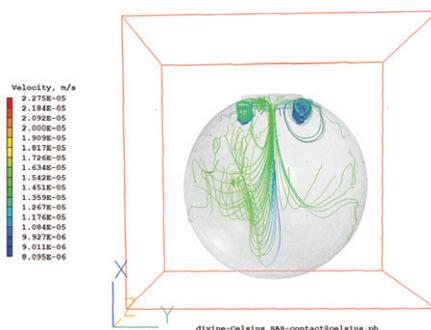
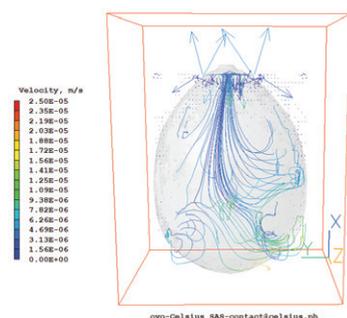
Stainless steel : 69



The Divine vat, with its elliptical shape, allows for speed propagation and therefore recirculation.

Thanks to this movement, the wine close to the wall is renewed and allows a little more interaction with the oxygen.

The vat that allows a natural and important stirring is the Divine



The Ovo vat allows mainly downward movement with some random circulation. It allows for a still wine with some uncertain stirring.



The natural cradle of your wine

La Terre cuite

Cuite à 1020°C, les pores de la terre ne sont pas entièrement fermés et la micro-oxygénation est forte : plus qu'une barrique. Elle va bien convenir pour les cépages rouges à forte structure tannique. Si votre jarre est dans un milieu humide et frais, la consigne sera équivalente à celle d'une barrique. La porosité se situe entre 6 et 10%. L'argile toscane est très utilisée pour le vin et l'huile d'olive depuis le Moyen-Âge, elle est unique de par sa composition minéralogique grâce à la présence en forte quantité d'un résidu calcaire, nommé dans le jargon "galestro" (schiste argileux), facilement friable, et très connu dans l'Uperin toscain. Principales qualités : appartenants entièrement faits main.

Terre naturelle permettant une micro-oxygénation naturelle. Elle va bien convenir pour les cépages rouges à forte structure

Le Grès

est cuit entre 1200 et 1300°C, c'est un matériau très résistant, facile à nettoyer. Les pores de la terre sont fermés et la micro-oxygénation est réduite. Il va bien convenir pour les cépages blancs ou les cépages rouges délicats. La consigne est faible. Le grès est moins sensible aux différences de température que la terre cuite. La porosité est inférieure à 2,5%. Principales qualités du Grès : Terre naturelle permettant un contact direct avec le vin. Lisse à l'intérieur, facilitant le nettoyage. Résistance aux agressions chimiques et thermiques. La poterie en grès provient d'une argile riche en silice cuite à haute température. La fabrication des contenants se fait par liaison de plusieurs étages d'argile crue faits avec des moules. Vin et terre conçus les formes des jarres ingénieuses réalisées en assure la réali. Nos pièces sont uniques et leurs parques et modèles sont protégés

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