

# Wine Closures

Wine and cork have been companions for centuries. Proof of this is an amphora from the 1st century BC found in Ephesus that was not only sealed with a cork stopper but also still contained wine.

Natural cork has been the exclusive closure since glass bottles became the primary wine container although recently, alternative wine closures have been gaining acceptance in the wine industry. The emergence of these alternatives has grown in response to quality control efforts by winemakers to protect against "cork taint" which is caused by the presence of the chemical, trichloroanisole (TCA). Currently, more than 30% of bottled wines use non-cork closures.

The following is some information on the major alternative closures now in use.



**Natural Cork** is harvested from the Portuguese cork tree. The trees are a type of oak and must be at least 25 years old before harvesting. The bark from each tree is stripped once every nine years ensuring that the tree has plenty of time to regenerate and flourish between harvests. Once stripped, the cork "planks" are dried and then boiled to try to remove impurities and standardize the final moisture content.



However, the chemical TCA cannot be completely eliminated and the Oxygen Transmission Rate (OTR) through corks is not constant but dependent on humidity which is why wine storage humidity is a critical issue.

**Screw Caps**, also known as 'Stelvin' closures from their major manufacturer, are closures made from aluminum material that thread onto the bottleneck. Various liner materials can be used to control oxygen ingress rates; one company will customize a screw cap to provide whatever oxygen rate the winemaker would prefer. Stelvins are the predominant closure used by Australian and New Zealand wineries and are being used increasingly around the world. Screw caps have been associated with cheap wines in the past but have largely overcome that perception. Cork taint is eliminated and a tighter seal limits OTR's, maintaining the wine's overall quality and aging potential. The famous Burgundy winemaker, Domaine Laroche, noted; "This played a role in my decision to adopt screw caps: apart from protecting against cork taint, screw caps also benefited aging of wine and preserving the aromatic freshness."



**Technical Cork** is made in part from a lower-grade cork than natural corks and the leftover bits and pieces from trimming natural corks. To make a technical cork, many cork granules are pressed together with a food-safe binding agent. Then, they are either injected into stopper molds or are extruded like pasta. Cork taint has been reduced but not totally eliminated.

**Synthetic Cork** is manufactured from plastic compounds designed to look and "pop" like natural cork. Unlike natural corks or technical corks, synthetic cork eliminates the possibility of cork taint. Disadvantages of some synthetic corks include a risk of harmful air entering a bottle after only 18 months, as well as the difficulty in extracting them from the bottle, and they are not biodegradable like natural cork. It has also been reported that some can impart a slight chemical flavor to wine.

**Vino-Seal** closures are made from glass with an inert O-ring (Elvax) creating a hermetic seal that prevents oxidation and TCA contamination. Because the closure is glass, it's recyclable and lends weight to wineries' claims of being environmentally friendly. Since its introduction into the European market in 2003, over 300 wineries have utilized Vino-Seal including Napa's Whitehall Lane Winery and Calera Wine Company, a pioneer California Pinot Noir producer founded in 1974. This from Calera's founder, Josh Jensen:



"We did a trial with the 2006 vintage Viognier, bottling half with Vino-Seal and the other half with a screw cap. The quality of wine seemed to be equal, but customers said they really preferred the Vino-Seal. Believe it or not, we've now bottled more than 70,000 cases of wine with Vino-Seal, and we still have not received our first complaint. We have not received a single complaint from any consumer, from any wine shop, any sommelier or restaurant, distributor or any of our importers overseas - which is pretty amazing, because wine people love to complain about things".

**Closures at VIDON** - The first years, as a neophyte learning winemaking, closures were not a major issue. So I invested in good corking equipment – a corking machine and capsule spinner. In 2005 after starting to understand cork issues, I purchased a screw cap applicator and switched to Stelvins for white and Pinot Noir 3-Clones. Then in 2008, after learning more about corks, I started using Vino Seals on the Pinot Noir Single Clones. Cork taint and early oxidation were not eliminated by using the best and most expensive corks I could find. Therefore in 2011 I went 100% Vino Seal for all red wines. A plastic, logoed, heat-shrink capsule covers the Vino-Seal closure and ensures its integrity.



**The Facts** – Closures and corks are only one of several controversial subjects in winemaking. The main reason corks remain the predominant closure is tradition; change doesn't come about easily in many fields. As long as one is willing to accept an occasional bad bottle of wine, corks are fine. A problem is that much of the time a cork-tainted wine isn't recognized as such but is passed off as "just not a good wine" which means it's the winemaker's fault. And oftentimes a slightly tainted wine is consumed as "not too bad" while if it could be tasted alongside an untainted wine with the same label, the reaction may have been "wow, this is great"!



| <b>Cork Taint Rate in<br/>Wine Spectator's<br/>Blind California Tastings</b> |
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| 2013: 4.26 percent tainted   |
| 2012: 3.67 percent tainted   |
| 2011: 3.8 percent tainted  |
| 2010: 4.8 percent tainted  |
| 2009: 6.9 percent tainted  |
| 2008: 7.5 percent tainted  |
| 2007: 9.5 percent tainted  |
| 2006: 7.0 percent tainted  |
| 2005: 7.5 percent tainted  |

Premature oxidation of wines kept for aging can be a serious problem because natural cork OTR varies from 0.0005 to 0.01 cc/day/bottle and up to 0.04 cc/day/bottle for synthetic cork. Stelvins are now available at 4 OTR levels from 0.0005 to 0.05 cc/day/bottle and Vino-Seal OTR is about 0.003 cc/day/bottle.

Until cork problems are solved, VIDON will continue to use Stelvin and Vino-Seal closures. We believe our customers want the wine they pour from our bottles to be the wine we put in it.

Cheers!