

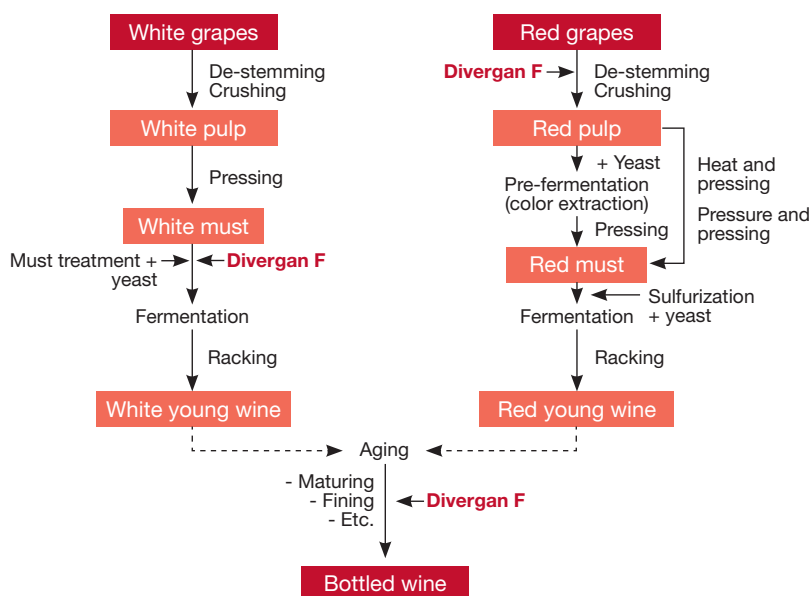


Divergan® is a crosslinked polyvinylpyrrolidone (PVP) that is also known as PVPP. It is produced by popcorn polymerization. Divergan® is insoluble in water, acids and caustic and organic solvents. Divergan® F is our one-way solution for the beverage application including beer and wine.

Why is Divergan® necessary and important?

Even after filtration, clear beverages contain dissolved phenolic compounds and proteins that form complexes which subsequently lead to turbidity. Divergan® F reduces phenolic compounds without altering the character of your beer or wine. Divergan® F is completely separated from the liquid during filtration. Divergan® is marketed worldwide and supports the clean label approach.

When to use Divergan® F during the winemaking process



The consumer prefers high-quality wines

Polyphenols are set free through de-stemming, pressing and crushing of fruits. In part of the enological processes more polyphenols are being released into the wine due e.g. to prolonged fermentation of the must. If the polyphenols oxidize during vinification, discoloration and bitterness can occur, diminishing the clarity and sensory character of the wine.

80 percent
of the world's wine
production is produced
by 10 countries.

How Divergan® F is applied in wine:

Divergan® F can be used in wine on a curative or preventive basis. For preventive measures in white must, use a Divergan® F concentration between 10 – 30 g/hL.

For curative treatment against bitterness and oxidation, use a dosage of 20 – 80 g/hL for white wines and 5 – 20 g/hL for red wines.



In the extreme cases, the polyphenols react with oxygen and other components of the wine such as albumen or iron, producing instable complex compounds. This leads to over-colored or cloudy wines, or wines that age too quickly.

Wine is a part of good taste. And good taste is a part of wine.

In the past few years the science of enology has developed an entire series of concepts for the elimination of these wine flaws. Unfortunately they can also change the character of the wine, sometimes quite drastically. For example, oxidation of the must can result in flat, less aromatic wines. The entire vinification process, as well as the separate prolongation of the initial process, can produce lean or thin wines when the grapes are not fully ripe.

And what about polyphenols? Purification is necessary!

There is a clear and simple answer for the problem of discoloration. Direct reduction of polyphenols in wine and must leaves the character of the wine intact, preserving its integrity. Only a small amount of Divergan adsorbs polyphenols in white and rosé wines as well as base wines for sparkling wines, and does so without harming their sensory potential. The treatment of red wine is also possible, allowing the character and bouquet of the wine to develop without disturbing the color.

Curative or preventative – how Divergan works.

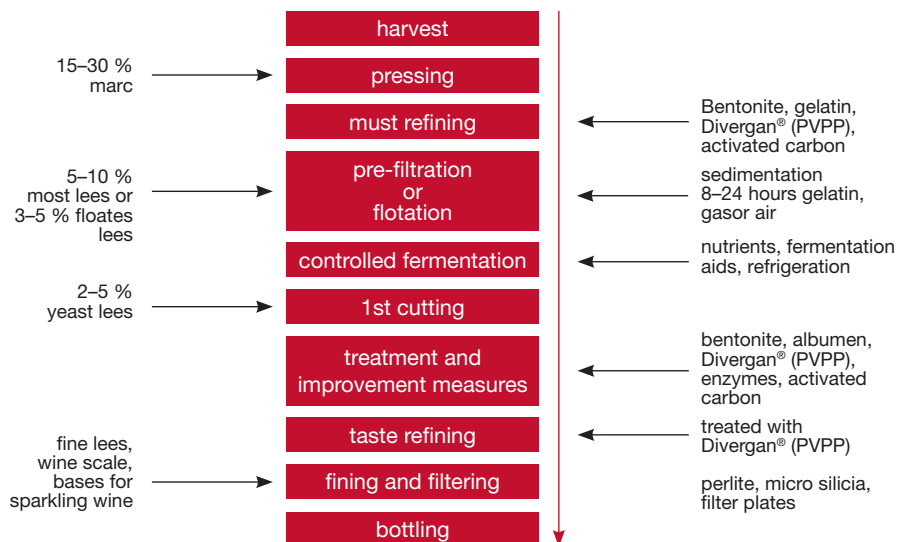
The Divergan products can be added to the wine that is being treated, either directly in powder form or as a suspension. For the latter, a 10 % suspension of Divergan F is dissolved in a corresponding amount of the wine to be treated or in water. After 30 minutes developing time during which it is stirred often, the PVPP suspension is poured into the treatment vat and mixed thoroughly into the contents of the vat.

For preventative measures in white must or white wine use a Divergan concentration between 10 g/hl and 30 g/hl. The amount of Divergan needed is established, for example, by browning tests. For treatment against bitterness use Divergan F in proportions of 15 – 25 g/hl.

Dosage for wine damaged by oxidization is 30 – 50 g/hl. In extreme cases, a higher concentration may be necessary. For the most effective treatment, must should be clarified and wine finely filtered. Contact times from 20 to 60 minutes are sufficient with sufficient mixing, whereby longer contact times are also possible without a negative effect on the wine. With shorter contact times, as may be used with Divergan F, the polymer should be added as a suspension after being allowed to develop.

To save time, the wine can be filtered before the sedimentation of the PVPP is complete. The contact time, however, can also be lengthened until the refiner, for example Divergan F, has settled completely.

When to use refiners during the winemaking process



(Modified according to Binder)

Poor color and bitter tastes in wine can have many causes:

- Intense maceration of the must during the runoff process if the screw-conveyor and the pump of pumping systems are not well coordinated
- Too short (smaller than 90 mm) or too long must lines, too many bends or valves
- The must is allowed to stand too long
- The pressing process is not suited to the grapes, or is too intense
- High rot concentration in the harvested grapes
- Insufficient or lack of treatment and pre-filtration of the must



Unfortunately, some natural processes see that somewhat differently. The following reactions of the polyphenols lead to discoloration in white wine:

- Flavanoids and other polyphenols are converted through oxidation to unpleasant or astringent flavors.
- Browning and changes in color (pinkening) are caused by oxidation of leucoanthocyanides.
- The reaction of tannins and albumen or iron leads to clouding.

Furthermore, must from regions with vintage related middle to high botrytis contamination can be negatively affected by the resulting metabolic byproducts. This can also diminish the quality of the wines.

