polyclar™ v and vt
wine stabilizers

Description

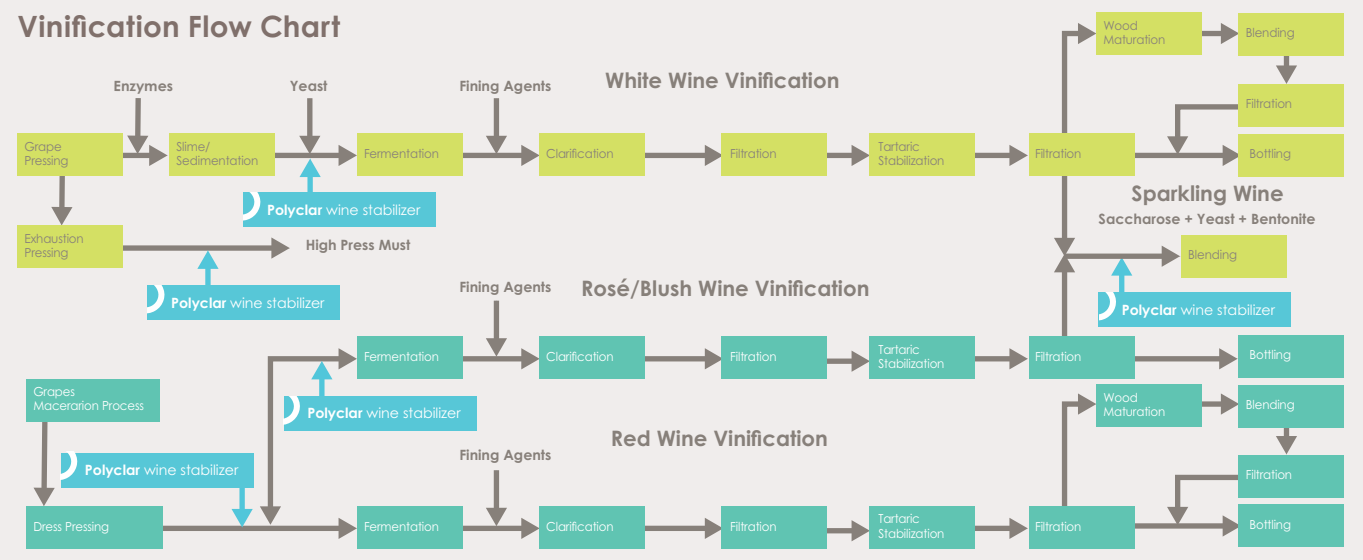
Polyclar V and VT wine stabilizers from Ashland are based on proven polyvinylpolypyrrolidone (PVPP) technology. This provides effective and highly selective reduction of polyphenols that cause oxidative discoloration, haze or loss of fresh aroma and flavor characteristics. More specifically Polyclar wine stabilizers result in:

- Prevention of 'pinking' and 'browning' reactions in white and sparkling wines
- Improved wine clarity in bottle
- Enhanced aroma and flavor in red wines — preserving more of the highly desirable fresh, fruity character
- Reduction in excessive astringency or color when needed

Methods of Use

Polyclar wine stabilizers are made up as 5% to 10% slurry in water or wine and allowed to mix for 1 hour before use. This permits the stabilizer to fully hydrate and maximizes its effectiveness. A minimum contact time of 5 to 10 minutes with the wine is all that is required. After use, the insoluble stabilizers are completely removed from the wine by racking and/or filtration.

Polyclar stabilizers can be added at a number of convenient places in the wine-making process, as shown in the diagram below:



Polyclar™ V Wine Stabilizer

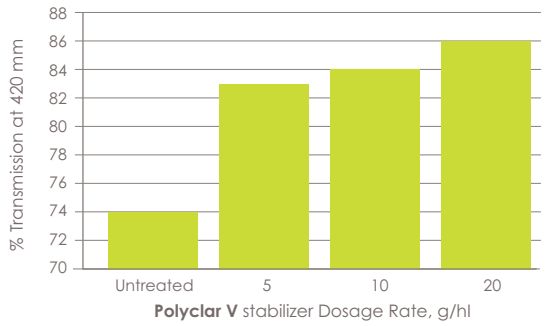
Description

Polyclar V wine stabilizer is a highly effective 100% PVPP wine stabilizer with an average particle size around 25 µm. It is optimized for maximum, fast-acting reduction of problematic polyphenols, such as the leucoanthocyanidins and catechins, that may cause 'pinking' and 'browning' through oxidative polymerization.

Specific Benefits

Polyclar V wine stabilizer is the preferred option for use in wine due to its high surface area, which permits maximum efficacy. It is usually added to wine after initial clarification, during or after tartaric stabilization, or before pre-bottling filtration. If added during the filtration process, a minimum contact time of 5 minutes is recommended. A diatomaceous earth filter should also be used.

Effect of Polyclar V Stabilizer Treatment on Light Transmission at 420 nm on Chardonnay Wine



A significant improvement in clarity was seen following the addition of 5 to 20 g/hl of Polyclar V wine stabilizer to chardonnay.

Polyclar VT wine stabilizer

Description

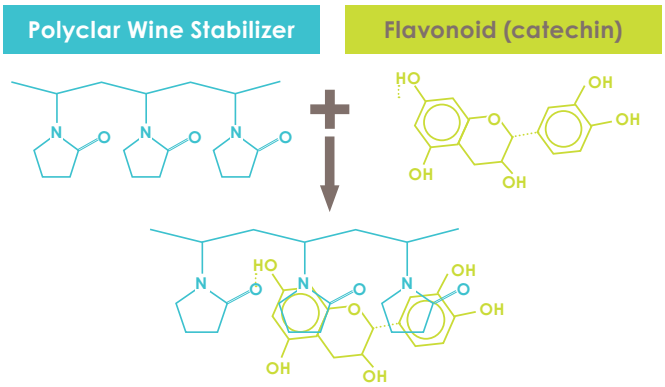
Polyclar VT wine stabilizer is a grade of 100% PVPP with an average particle size of around 140 µm. It is designed for addition to vessels, where faster settling is required.

Specific Benefits

Polyclar VT wine stabilizer is a coarser grade of PVPP, optimized for addition to wine in tanks. The larger particle size facilitates settling of the stabilizer which allows the majority of the product to be left behind with the lees at racking.

A typical contact time of between 3 to 10 days is required, although there are no adverse effects from leaving Polyclar wine stabilizer in contact with the wine for longer periods. Filtration is still needed to produce a bright wine, but the amount of solids present should be much lower.

The Mechanism of Adsorption of Polyphenols Using Polyclar Stabilizers



Polyclar wine stabilizer preferentially forms very strong bonds with the more problematic polyphenols which can cause visual and flavor problems in wine. It is insoluble in water, alcohol, acid and alkali and removed from the wine to allow an additives-free 'clean label'.

Polyclar in Modern Oenology

- Remedial treatments cannot be considered to be a true part of modern oenology.
- Preventative addition rates in white or red wines are typically lower than remedial rates.
- Preventative addition of 2 to 10 g/hl of Polyclar wine stabilizer to young red wine, can extend shelf life without affecting wine color.

Other Benefits of Polyclar Wine Stabilizers

- Some polyphenols delay yeast growth by blocking cell membranes and inhibiting mitosis.
- Polyclar wine stabilizers reduce these negative effects and may improve fermentation rates.
- Polyclar wine stabilizers can be added to the must with the yeast nutrients.
- The cost is approximately half that of the wine yeast.

Compatibility

Polyclar™ V and Polyclar VT stabilizers are compatible with all standard clarification and protein stabilization agents and treatments used in wine.

Hydration and Dispersion

Polyclar V and VT products have the advantage of being hydrophilic and easily dispersed in water or wine. They are usually slurried by thoroughly dispersing 5 to 10% of the product in water or wine at least one hour before use.

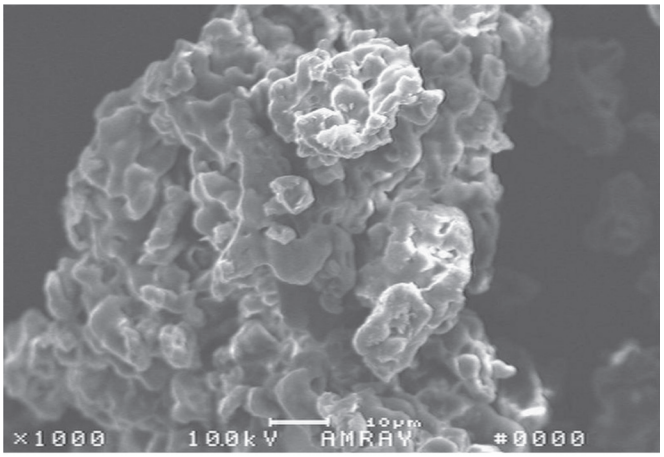
Particle Size Characteristics

Polyclar V stabilizer is optimized for rapid polyphenol reduction by micronization of the PVPP polymer. Due to its small particle size, Polyclar V stabilizer is best removed by filtration.

Polyclar VT stabilizer has a larger particle size that enhances its settling characteristics when added to wine in tank or vessel. It settles to form a compact lees and can be removed by racking and/or filtration.

Typical Mean Particle Size of Hydrated Polyclar Stabilizers for Wine

Product	Typical Mean Particle Size (µm)
Polyclar V stabilizer	25
Polyclar V stabilizer	140



Polyclar PVPP wine stabilizer has a large surface area for effective stabilization performance.

Dosage Rates

Dosage rates reflecting current typical usage are shown below. The exact amount of stabilizer required is dependent upon the wine type, raw materials and process conditions in the winery. Ashland and its local distributors can offer advice for individual winery regimes.

Typical Dosage Rates of Polyclar V and VT Stabilizers

Wine Type	Polyclar V stabilizer Preventative Treatment	Polyclar V stabilizer Remedial Treatment
White	10–25 g/hl	10–60 g/hl
Rosé/Blush	10–30 g/hl	10–60 g/hl
Red	5–10 g/hl	5–20 g/hl
Sparkling	5–40 g/hl	5–60 g/hl
Fortified	10–50 g/hl	10–60 g/hl
Wine Type	**Polyclar VT stabilizer Preventative Treatment**	**Polyclar VT stabilizer Remedial Treatment**
White	15–30 g/hl	15–70 g/hl
Rosé/Blush	15–40 g/hl	15–70 g/hl
Red	5–15 g/hl	5–20 g/hl
Sparkling	8–50 g/hl	8–70 g/hl
Fortified	12–60 g/hl	12–70 g/hl

Quality, Safety and Service

Quality

Polyclar stabilizer products are manufactured to internationally recognized quality standards. Details are available upon request.

Regulatory

PVPP is permitted for use in beverages in all countries with regulations covering the use of additives and process aids. Always seek guidance from your local regulatory authorities.

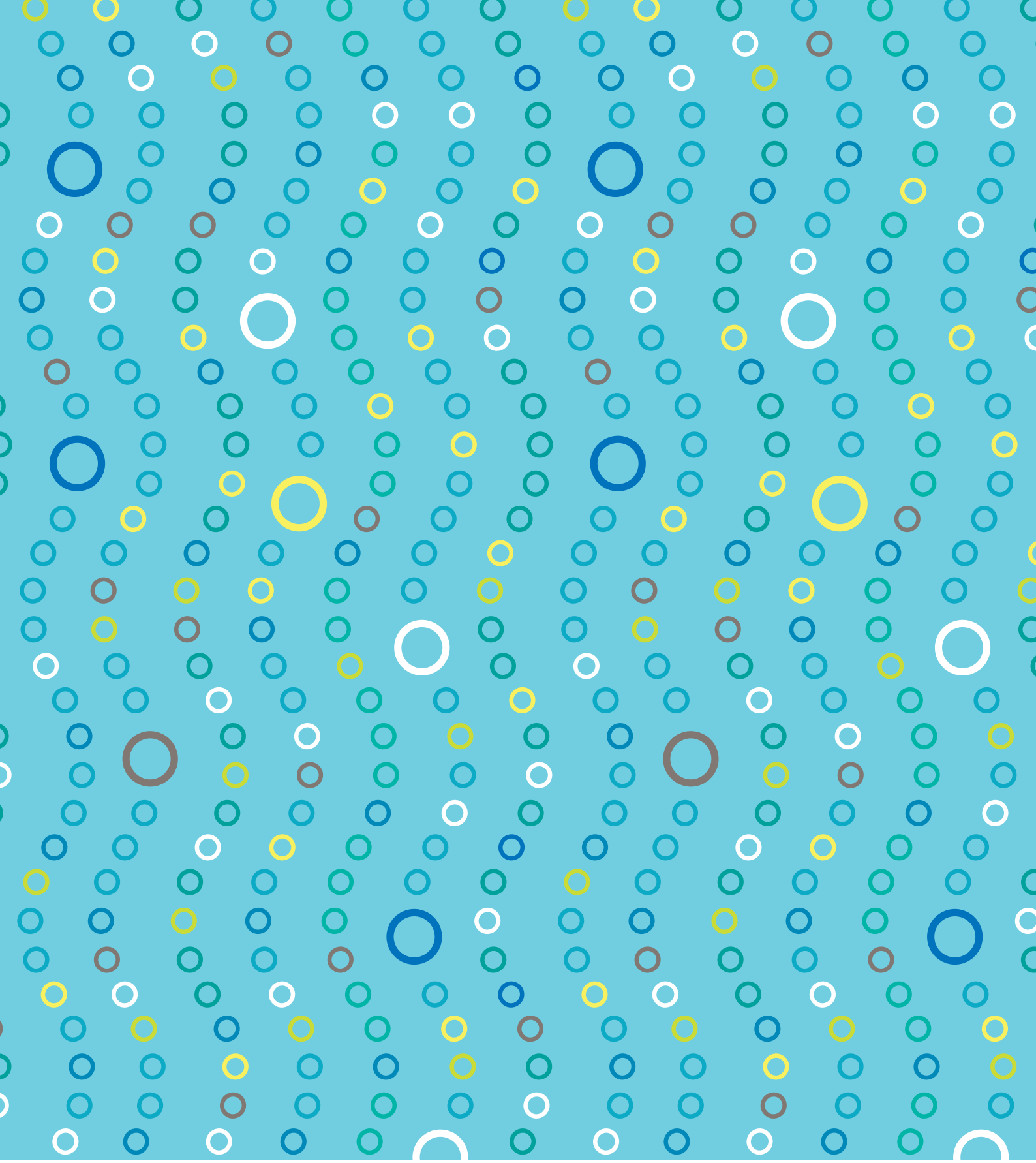
Safety

Safety Data Sheets are available upon request.

Technical Support

Technical support for Ashland's beverage product portfolio is provided by a team of dedicated industry specialists, from locations in Europe, the U.S. and Asia. For further information on the use of our products, please contact your local Ashland representative or authorized distributor.

Ashland also supplies products and services to the wine, brewing and wider food and beverage industries. We are always solving stability and clarifying challenges to introduce innovative new products to better serve our increasing number of customers in these markets.



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