

Ercofid Pure-Liquid

Liquid fining agent to treat sulphur off flavours like disulphide, mercaptans and thioacetates.

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On 7 December 2019, authorisation for use of silver chloride preparations to treat stubborn sulphur off flavours expired. Only copper sulphate and copper citrate are still allowed. These salts have not proved their worth, though, when treating these stubborn off flavours.



Unlike silver chloride preparations, copper ions react easily with hydrogen sulphide and form hardly soluble copper sulphide, which can be separated easily (Fig. 1). Oxidised forms and more complex compounds with other reaction partners, such as alcohol, acet-

aldehyde and acetic acid, on the other hand, can rarely be removed by copper ions. If these compounds form in wine, volatile off aromas with very low odour thresholds can occur as a result of storage reactions (Fig. 2).

Diverse approaches to off-flavour treatment

Ercofid Pure-Liquid serves several aspects of off flavour removal. Off flavours consists of components with differing reactivities and may be partly masked by oxidation or complex formation. For this reason Ercofid Pure-Liquid is made up of several active components, such as tannin, yeast cell walls, bentonite, activated carbon and ascorbic

acid, which effectively remove sulphur compounds bound to copper ions, such as hydrogen sulphide, disulphide, mercaptans and thioacetates. The low copper charge minimises after-effects, such as accelerated oxidation of wine (Fig. 3).

As a result of the liquid formulation, Ercofid Pure-Liquid is easily distributed in wine, therefore ensuring intensive contact and a short reaction time.

When Ercofid Pure-Liquid is used correctly, there should be no significant copper residues in wine. It is necessary for the wine to be filtered promptly after fining.

How does Ercofid Pure-Liquid work?

Special yeast cell walls have the ability to bind copper ions. This creates a great potential to adsorb negative sulphur compounds, which form complexes with copper ions. The particular advantage is the low level of oxidation of wines by copper ions.

When wine is stored, oxidation of mercaptans gives rise to disulphides which are difficult to remove (Fig. 4). Ascorbic acid can split disulphide bonds, so that the free SH groups can again react more easily with copper ions.

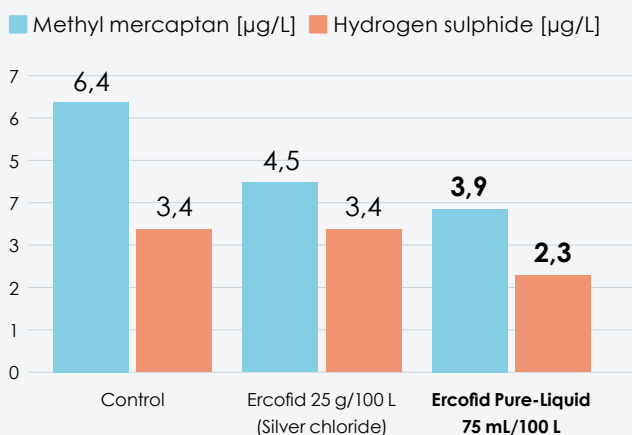


Fig. 1 Gas chromatographic analysis after off flavour treatment (filtration after 12 h) of young wine, Riesling 2019

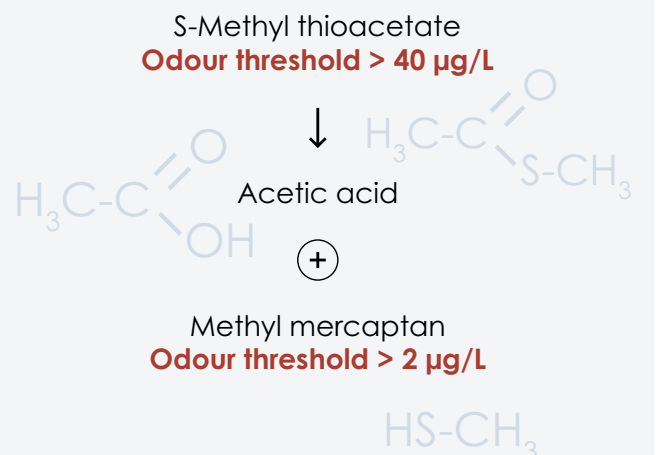


Fig. 2 Occurrence of stubborn off flavours during storage of wine. Hydrolysis of thioacetic acid esters

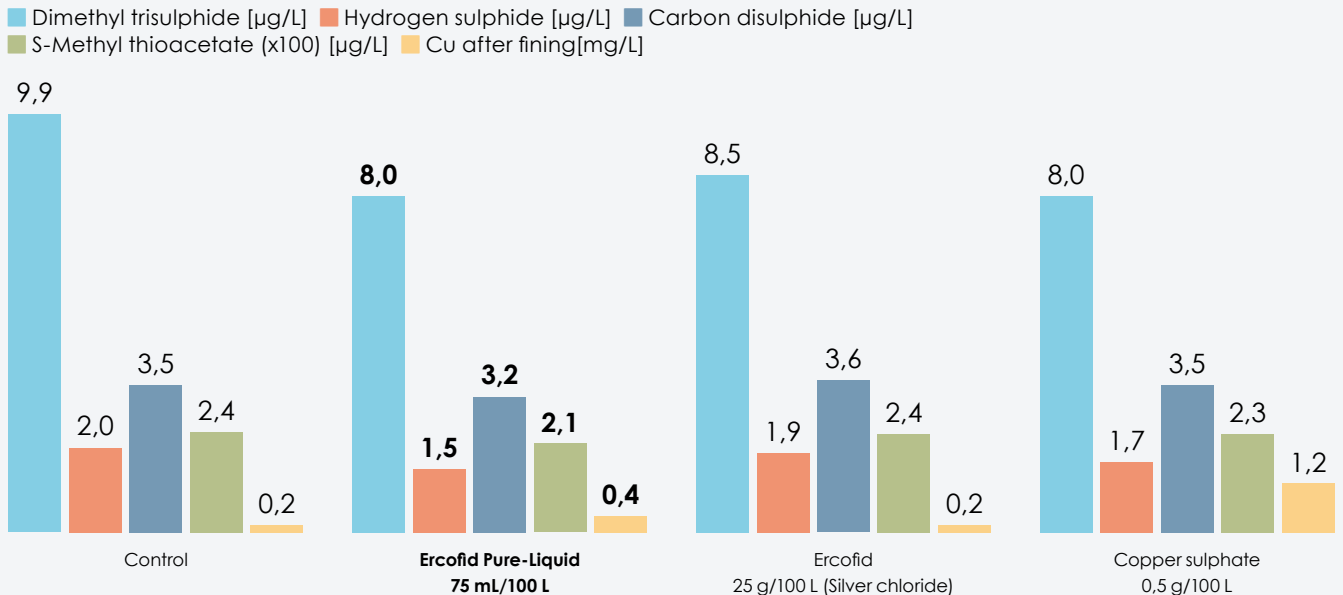


Fig. 3 Gas chromatographic analysis of sulphur compounds and atomic absorption spectrometer analysis of residual copper content after fining (filtration after 12 h) of stored wine, Chardonnay 2018

Other ingredients

In addition to its excellent ability to bond with specific proteins, bentonite also has ion-exchanging properties. This helps to reduce the volume of added copper and to bind copper complexes.

Activated charcoal can easily bind off flavours that consist of organic ring compounds with several sulphur atoms, as these can be easily polarised. As a result of copper ions forming complexes, molecular recognition increases, which in turn improves the bond with activated charcoal.

Gum arabic is important for stabilising the mixture, to prevent compact deposition of the suspension during storage. In conjunction with tannins it furthermore improves the wine's texture and mouth-feel.

The sensory effect after off flavour treatment with silver chloride, copper sulphate and Ercofid Pure-Liquid are shown in **Fig. 5**.

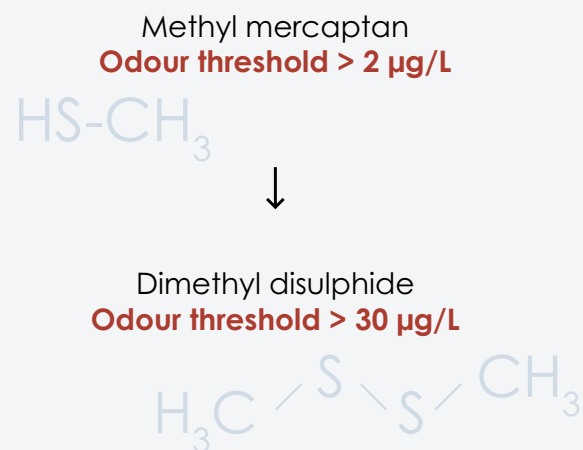


Fig. 4 Oxidation of mercaptans to disulphides

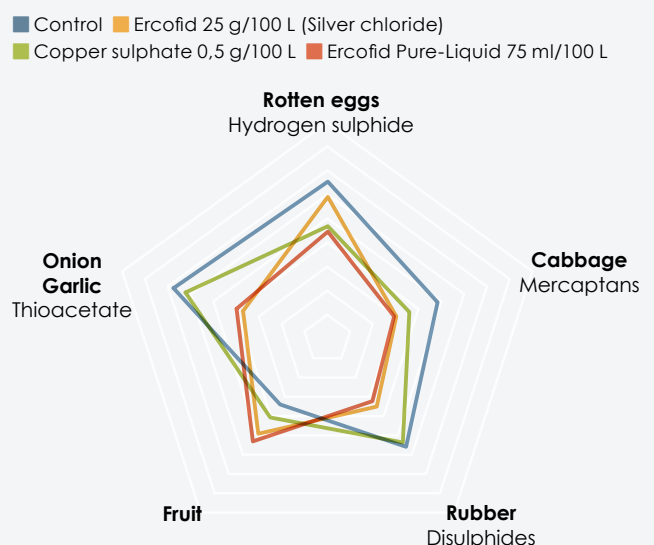


Fig. 5 Sensory analysis after fining (filtration after 12 h) of stored wine, Chardonnay 2018

