Newtrition

Divergan® F

Chemical name of active ingredient
Polyvinylpolypyrrolidone (PVPP)

PRD-No.
30034969*

* The product is kosher, halal

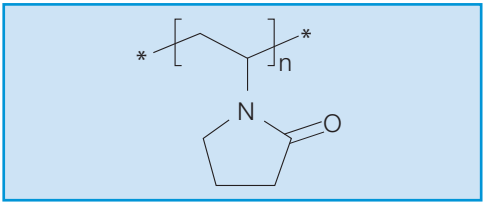
Articles

50116237	20 kg cardboard drum

CAS-No.
25249-54-1

Country of origin
Germany

Description
White, hygroscopic powder with a faint characteristic odor. Divergan® F is cross-linked polyvinyl pyrrolidone (PVPP) that has been manufactured by means of a patented polymerization process (DP 2437629). It is insoluble in water and all common organic solvents.



$(C_6H_9NO)_n$ **Molar mass cannot be determined as it is insoluble in all common solvents.**

Specification
For information see separate document: "Standard Specification" (not for regulatory purposes) available via BASF's WorldAccount: https://worldaccount.basf.com (registered access).

Monographs
Divergan® F meets the requirements of the current FCC (Crospovidon) monograph. Furthermore Divergan® F (E1202) complies with the current EU regulation laying down specifications for food additives.

BASF
We create chemistry

Regulations
PVPP can be used as a processing aid (filtration) in beverage application in most countries. However, specific regulations in the respective countries and for the intended use have to be observed.

Storage/Handling
In order to maintain its effectiveness, Divergan® F should be kept in its closed packaging, in a dry place. Stored in its unopened original packaging, the product is stable for 3 years without loss of activity.

Function
Beer:
Haze in beer is caused mainly by polyphenol-protein complexes. Divergan® F selectively adsorbs the polyphenols that cause turbidity. Removing the excess responsible for this problem considerably improves the colloidal stability of beer.

There is evidence that this also improves the stability of the taste, as the flavonoid polyphenols, in particular, are prone to polymerise to products of higher molecular weight that have a bitter taste.

Wine:
Divergan® F adsorbs phenolic compounds specifically. This distinctly improves the wine in a number of respects:

- Color
- Bouquet, taste
- Stability

The color of the wine can even be stabilised if many of the grapes (or other fruit) are rotten, or if the must has been left to stand for longer than usual.
Divergan® F has also been found useful for stabilising the color of apple juice and base wines for sparkling wine.
Divergan® F has a special affinity for flavonoid polyphenols. If these substances are not removed from the wine, they can undergo oxidative polymerisation during maturation, causing an undesirable bitter taste. Removing the precursors of tannins and bitter substances is a major factor in preserving the sensory properties of a wine.

Reducing the polyphenol content also decreases the risk of haze caused by protein-tannin compounds.
The risk of brown or black turbidity caused by high concentrations of tannins or iron-tannin complexes is also reduced.
In addition, Divergan® F can be recommended for treating age discoloration.

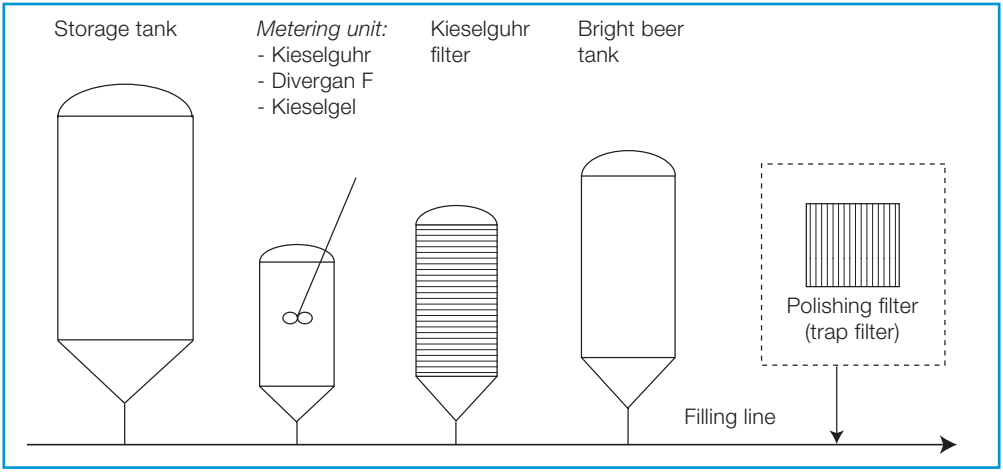


Fig. 1: Divergan® F is often metered into the beer continuously together with the kieselguhr.

Application

Beer:

The preferred method of introducing Divergan® F is to meter it continuously into the beer stream with a metering pump.

If no separate metering unit is available, the Divergan® F can be added together with the filtration agent, usually kieselguhr. Provision must be made for a contact time of at least 3 minutes. In calculating the contact time, the sludge capacity of the filter must also be taken into account.

In some breweries, silica gel is added together with the PVPP to the same supply tank. This gives a highly efficient combination of filtration and stabilisation effects that also saves on capital investment, as no further equipment is required (Fig. 1).

Wine:

Divergan® F can be used both preventively and remedially. It is best added as a 10% suspension in a portion of the medium to be treated, i. e. the must or wine, or in water.

The polymer suspension must be allowed to swell for 1 – 2 hours, preferably with constant stirring, after which it can be added to the fining tank and homogeneously distributed with a stirrer. Within a few minutes (approximately 5 – 10 minutes), it has almost completed its work.

If, however, the Divergan® F is added dry, it must be thoroughly mixed in and allowed at least 30 min to act.

To save time, the wine or juice can be filtered before the PVPP has completely settled out, though there is no harm in waiting until it has.

Dosage

Beer:

The optimum rate of addition depends on many factors. A major factor is the stability to be achieved – shelf lives of more than 12 months are possible. Other factors include the raw materials used, the cellar equipment, the degree of clarification prior to filtration, and the type and quantity of other stabilising auxiliaries used.

	Divergan® F alone	**Divergan® F when combined with silica gel**
Beer brewed from 100% malt	20 – 40 g/hl	10 – 30 g/hl
Beer brewed with adjuncts (ratio approx. 30%)	10 – 30 g/hl	10 – 20 g/hl

Table 1: Addition rates for Divergan® F

Wine:

The amount required depends on a number of factors. Preventive use generally requires a lower dosage than that needed for remedial use, i. e. to correct a problem after it has occurred. Because of the multitude of factors involved and the differing requirements of wine producers, we recommend conducting trials on a laboratory scale to determine the optimum quantity for fining.

The best results are obtained if the medium to be treated has already been largely clarified.

Within the EU, the maximum amount of PVPP that can be used in wine fining is restricted by law to 80 g/hl. PVPP is allowed in fruit juices as filtration aids within the EU without an upper limit.

	Preventive use	**Remedial use**
Juice	As required	As required
Must	10 – 20 g/hl	
White wine		20 – 80 g/hl
Red wine		10 – 20 g/hl

Table 1: Dosage guide for Divergan® F. The optimum amount should be determined in laboratory-scale tests. There are white wines that need as little as 10 g/hl for good results.

Note

Divergan® F must be handled in accordance with the Safety Data Sheet.

November 2015