COEI-1-DIATOM Diatomite

Keiselguhr

Terre silicea

1. Object, origin and field application

Diatomite is a sedimentary rock made up of siliceous shells (tests) of diatomite fossils (unicellular microscopic algae). For enological purposes, this rock is crushed, dried, shredded, purified through cleaning, and calcinated at a high temperature of 950 to 1000°C. Melted alkaly can be added during the calcination process.

It is used when pulverised with a granulometer between 5 to 40 microns and can be found in a pink powder form for calcinated products or white for calcinated activated products.

Diatomite is a filter aid for musts and wine. The usage of diatomite requires wearing a protective mask.

2. Labelling

The label must indicate granulometry, permeability, the specifications of accompanying documents in addition to the storage and safety conditions.

3. Test trials

3.1. Odour and taste

Diatomite should not carry any odour or foreign taste to the wine. Put 2.5 g of diatomite in a litre of wine. Mix. Leave 24 hours. Compare the taste to wine not containing any diatomite.

3.2. Loss during drying

Put 5 g of diatomite in a capsule. Heat in an incubator to 103 ± 2°C. After two hours mass loss should not be more than 1%.

3.3. Loss through calcinations

Bring the dry residue obtained in point 3.2 to 550°C in a furnace. Weight loss should not be more than 3%.

3.4. Measure pH level

In a 250 ml container put approximately 10 g of diatomite, then slowly add 100 ml of water to moisten the product and to get a homogeneous suspension. Mix by hand

from time to time using a magnetic mixer. After 10 minutes, let the suspension settle and measure the pH. Calcinated diatomites (pink) have a pH level between 5 to 7.5 and activated calcinated diatomites (white) have a pH level between 6 to 10.5.

3.5. Soluble products in diluted acids

Bring to a boil 10 g of dried diatomite with 20 ml of concentrated hydrochloric acid (R) and 100 ml of water. Collect the diatomite on an ashless filter paper and wash the residue with 100 ml of distilled water. After desiccation at 100-105°C and incineration, separate the filter of insoluble residue, which should weigh at least 9.8 g and constitute 98% of the dried product.

3.6. Preparation of test solution

In a 500 ml flask, which can be hermetically sealed, put 200 ml of citric acid solution at 5 g per litre bring to pH 3 (R) and 10 g of diatomite. Put this in a magnetic mixer and mix for 1 hour at a temperature of 20 ± 2°C. Allow to settle and filter by eliminating the first 50 ml of filtrate. Collect at least 100 ml of clear liquid.

3.7. Iron

On the test solution prepared according to point 3.6, determine the iron following the procedure described in Chapter II. Iron content must be less than 300 mg/kg.

3.8. Lead

On the test solution prepared according to point 3.6, determine the lead following the procedure described in Chapter II. Lead content must be less than 5 mg/kg.

3.9. Mercury

On the test solution prepared according to point 3.6, determine the mercury following the procedure described in Chapter II. Mercury content must be less than 1 mg/kg.

3.10 Arsenic

On 4 ml of test solution prepared according to point 3.6, determine the arsenic following the procedure described in Chapter II. Arsenic content must be less than 3 mg/kg.

4. Storing conditions

Diatomite must be stored in dry well ventilated places or in vacuumed packed sealed bags in a temperate place.