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ANNEX I A

AUTHORISED OENOLOGICAL PRACTICES AND PROCESSES.

1	2	3
Oenological practice	Conditions of use^a	Limits on use Applications
1	Aeration or oxygenation using gaseous oxygen	
2	Heat treatments	
3	Centrifuging and filtration with or without an inert filtering agent	Use of an agent must not leave undesirable residues in the treated product
4	Use of carbon dioxide, argon or nitrogen, either alone or combined, in order to create an inert atmosphere and to handle the product shielded from the air	
5	Use of yeasts for wine production, whether dry or in wine suspension	Only with fresh grapes, grape must, partially fermented grape must, partially fermented grape must obtained from raisined grapes, concentrated grape must and new wine still in fermentation and for the second alcoholic fermentation of all categories of sparkling wine.
6	The use, to encourage yeast development, of one or more	

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b These ammonium salts may also be used in combination, up to an overall limit of 1g/l, without prejudice to the specific limits of 0,3 g/l or 0,2 g/l set above.

c The use limit is 250 mg/l for each treatment.

d [OJ L 237, 10.9.1994, p. 13.](#)

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	of the following substances, with the possible addition of microcrystalline cellulose as an excipient:		
—	addition of diammonium phosphate or ammonium sulphate	Only with fresh grapes, grape must, partially fermented grape must, partially fermented grape must obtained from raisined grapes, concentrated grape must and new wine still in fermentation and for the second alcoholic fermentation of all categories of sparkling wine.	No more than 1 g/l (expressed in salts) ^b or 0,3 g/l for the second fermentation of sparkling wines.
—	addition of ammonium bisulphite	Only with fresh grapes, grape must, partially fermented grape must, partially fermented grape must obtained from raisined grapes, concentrated grape must and new wine still in fermentation	No more than 0,2 g/l (expressed in salts) ^b and up to the limits set in point 7.
—	addition of thiamin hydrochloride	Only with fresh grapes, grape must, partially fermented grape must, partially fermented grape must obtained from raisined grapes, concentrated grape must and new wine still in fermentation and for	No more than 0,6 mg/l (expressed in thiamin) for each treatment

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		the second alcoholic fermentation of all categories of sparkling wine.	
7	Use of sulphur dioxide, potassium bisulphite or potassium metabisulphite, also called potassium disulphite or potassium pyrosulphite		Limits (i.e. maximum quantity in the product placed on the market) as laid down in Annex I B
8	Elimination of sulphur dioxide by physical processes	Only with fresh grapes, grape must, partially fermented grape must, partially fermented grape must obtained from raisined grapes, concentrated grape must, rectified concentrated grape must and new wine still in fermentation	
9	Treatment with charcoal for oenological use	Only for musts and new wines still in fermentation, rectified concentrated grape must and white wines	No more than 100 g of dry product per hl
10	Clarification by means of one or more of the following substances for oenological use: — edible gelatine, — plant proteins from wheat or peas,	Conditions for using beta-glucanase laid down in Appendix 1	

a Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.

b These ammonium salts may also be used in combination, up to an overall limit of 1g/l, without prejudice to the specific limits of 0,3 g/l or 0,2 g/l set above.

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	<ul style="list-style-type: none"> — isinglass, — casein and potassium caseinates, — egg albumin, — bentonite, — silicon dioxide as a gel or colloidal solution, — kaolin, — tannin, — pectolytic enzymes, — enzymatic preparations of beta-glucanase 		
11	Use of sorbic acid in potassium sorbate form		Maximum sorbic acid content in the product so treated and placed on the market: 200 mg/l
12	Use of tartaric L(+) acid, malic L acid, DL malic acid, or lactic acid for acidification purposes	Conditions and limits laid down in points C and D of Annex V to Regulation (EC) No 479/2008 and Articles 11 and 13 of this Regulation. Specifications for L(+) tartaric acid laid down in paragraph 2 of Appendix 2	
13	Use of one or more of the following substances for deacidification purposes:	Conditions and limits laid down in points C and D of Annex V to Regulation (EC) No 479/2008 and	
a	Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.		
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	<ul style="list-style-type: none"> — neutral potassium tartrate, — potassium bicarbonate, — calcium carbonate, which may contain small quantities of the double calcium salt of L(+) tartaric and L(-) malic acids, — calcium tartrate, — L(+) tartaric acid — a homogeneous preparation of tartaric acid and calcium carbonate in equivalent proportions and finely pulverised 	Articles 11 and 13 of this Regulation. Specifications for L(+) tartaric acid laid down in Appendix 2	
14	Addition of Aleppo pine resin	Under the conditions set out in Appendix 3	
15	Use of preparations from yeast cell walls		No more than 40 g/hl
16	Use of polyvinylpolypyrrolidone		No more than 80 g/hl
17	Use of lactic bacteria		
18	Addition of lysozyme		No more than 500 mg/l (where added)

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			to both the must and the wine, the total overall quantity must not exceed 500 mg/l)
19	Addition of L ascorbic acid		Maximum content in wine thus treated and placed on the market: 250 mg/l ^c
20	Use of ion exchange resins	Only with grape must intended for the manufacture of rectified concentrated grape must under the conditions set out in Appendix 4	
21	Use in dry wines of fresh lees which are sound and undiluted and contain yeasts resulting from the recent vinification of dry wine	For the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	Quantities not exceeding 5 % of the volume of product treated
22	Bubbling using argon or nitrogen		
23	Addition of carbon dioxide	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 7 and 9 of Annex IV to Regulation (EC) No 479/2008	In the case of still wines the maximum carbon dioxide content in the wine so treated and placed on the market is 3 g/l, while the excess pressure caused by the carbon dioxide must be less than 1 bar at a temperature of 20 °C
24	Addition of citric acid for wine stabilisation purposes	For partially fermented must for direct human consumption as such and the	Maximum content in wine thus treated and placed on the market: 1g/l

a Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.

b These ammonium salts may also be used in combination, up to an overall limit of 1g/l, without prejudice to the specific limits of 0,3 g/l or 0,2 g/l set above.

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		products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	
25	Addition of tannins	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Council Regulation (EC) No 479/2008	
26	The treatment: — of white and rosé wines with potassium ferrocyanide, — of red wines with potassium ferrocyanide or with calcium phytate	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 under the conditions set out in Appendix 5	In the case of calcium phytate, no more than 8 g/hl
27	Addition of metatartaric acid	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	No more than 100 mg/l

a Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.

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28	Use of acacia	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	
29	Use of DL tartaric acid, also called racemic acid, or of its neutral salt of potassium, for precipitating excess calcium	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 and under the conditions laid down in Appendix 5	
30	To assist the precipitation of tartaric salts, use of: — potassium bitartrate or potassium hydrogen tartrate, — calcium tartrate	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	In the case of calcium tartrate, no more than 200 g/hl
31	Use of copper sulphate or cupric citrate to eliminate defects of taste or smell in the wine	For partially fermented must for direct human consumption as such and the products defined	No more than 1 g/hl, provided that the copper content of the product so treated does not exceed 1 mg/l

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		in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	
32	Addition of caramel within the meaning of Directive 94/36/EC of the European Parliament and of the Council of 30 June 1994 on colours for use in foodstuffs ^d , to reinforce the colour	Only with liqueur wines	
33	Use of discs of pure paraffin impregnated with allyl isothiocyanate to create a sterile atmosphere	Only for partially fermented must for direct human consumption as such, and wine. Permitted solely in Italy as long as it is not prohibited under that country's legislation and only in containers holding more than 20 litres	No trace of allyl isothiocyanate must be present in the wine
34	Addition of dimethyldicarbonate (DMDC) to wine for microbiological stabilisation	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 and under the conditions laid down in Appendix 6	No more than 200 mg/l with no detectable residues in the wine placed on the market
35	Addition of yeast mannoproteins to	For partially fermented must	

a Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.

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	ensure the tartaric and protein stabilisation of wines	for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008	
36	Electrodialysis treatment to ensure the tartaric stabilisation of the wine	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 and under the conditions laid down in Appendix 7	
37	Use of urease to reduce the level of urea in the wine	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 and under the conditions laid down in Appendix 8	
38	Use of oak chips in winemaking and ageing, including in the fermentation	Under the conditions laid down in Appendix 9	

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	of fresh grapes and grape must		
39	Use: — of calcium alginate, or, — of potassium alginate,	Only for the manufacture of all categories of sparkling and semi-sparkling wines obtained by fermentation in bottle and with the lees separated by disgorging	
40	Partial dealcoholisation of wine	Only with wine and under the conditions laid down in Appendix 10	
41	Use of polyvinylimidazole/polyvinylpyrrolidone (PVI/PVP) copolymers in order to reduce the copper, iron and heavy metal content	Under the conditions laid down in Appendix 11	No more than 500 mg/l (where added to both the must and the wine, the total overall quantity must not exceed 500 mg/l)
42	Addition of carboxymethylcellulose (cellulose gums) to ensure tartaric stabilisation	Only with wine and all categories of sparkling and semi-sparkling wine	No more than 100 mg/l
43	Treatment with cation exchangers to ensure the tartaric stabilisation of the wine	For partially fermented must for direct human consumption as such and the products defined in paragraphs 1, 3, 4, 5, 6, 7, 8, 9, 15 and 16 of Annex IV to Regulation (EC) No 479/2008 and under the	

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b These ammonium salts may also be used in combination, up to an overall limit of 1g/l, without prejudice to the specific limits of 0,3 g/l or 0,2 g/l set above.

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	conditions laid down in Appendix 12
a	Unless otherwise stated, the practice or process described may be used for fresh grapes, grape must, partially fermented grape must, partially fermented grape must from raisined grapes, concentrated grape must, new wine still in fermentation, partially fermented grape must for direct human consumption, wine, all categories of sparkling wine, semi-sparkling wine, aerated semi-sparkling wine, liqueur wines, wines made from raisined grapes and wines made from over-ripened grapes.
b	These ammonium salts may also be used in combination, up to an overall limit of 1 g/l, without prejudice to the specific limits of 0,3 g/l or 0,2 g/l set above.
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Appendix 1

Requirements for beta-glucanase

1. International code for beta-glucanase: E.C. 3-2-1-58
2. Beta-glucan hydrolase (breaking down the glucan in *Botrytis cinerea*)
3. Origin: *Trichoderma harzianum*
4. Area of application: breaking down the beta-glucans present in wines, in particular those produced from botrytised grapes
5. Maximum dose: 3 g of the enzymatic preparation containing 25 % total organic solids (TOS) per hectolitre
6. Chemical and microbiological purity specifications:

Loss on drying	Less than 10 %
Heavy metals	Less than 30 ppm
Pb	Less than 10 ppm
As	Less than 3 ppm
Total coliforms	Absent
<i>Escherichia coli</i>	Absent in 25 g sample
<i>Salmonella</i> spp	Absent in 25 g sample
Aerobic count:	Less than 5×10^4 cells/g

Appendix 2

L(+) tartaric acid

1. Tartaric acid, the use of which for deacidification purposes is provided for in paragraph 13 of Annex I A, may be used only for products that:
 - are from the Elbling and Riesling vine varieties; and
 - are obtained from grapes harvested in the following wine-growing regions in the northern part of wine-growing zone A:
 - Ahr,
 - Rheingau,
 - Mittelrhein,
 - Mosel,
 - Nahe,
 - Rheinhessen,
 - Pfalz,
 - Moselle luxembourgeoise.
2. Tartaric acid, the use of which is provided for in paragraphs 12 and 13 of this Annex, also called L(+) tartaric acid, must be of agricultural origin and extracted specifically from wine products. It must also comply with the purity criteria laid down in Directive 2008/84/EC.

Appendix 3

Aleppo pine resin

1. Aleppo pine resin, the use of which is provided for in paragraph 14 of Annex I A, may be used only to produce ‘retsina’ wine. This oenological practice may be carried out only:
 - (a) in the geographical territory of Greece;
 - (b) using grape must from grape varieties, areas of production and wine-making areas as specified in the Greek provisions in force at 31 December 1980;
 - (c) by adding 1 000 grams or less of resin per hectolitre of the product used, before fermentation or, where the actual alcoholic strength by volume does not exceed one third of the overall alcoholic strength by volume, during fermentation.
2. Greece shall notify the Commission in advance if it intends to amend the provisions referred to in paragraph 1(b). If the Commission does not respond within two months of such notification, Greece may implement the planned amendments.

Appendix 4

Ion exchange resins

The ion exchange resins which may be used accordance with paragraph 20 of Annex I A are styrene and divinylbenzene copolymers containing sulphonic acid or ammonium groups. They must comply with the requirements laid down in Regulation (EC) No 1935/2004 of the European Parliament and of the Council⁽¹⁾ and Community and national provisions adopted in implementation thereof. In addition, when tested by the analysis method laid down in paragraph 2, they must not lose more than 1 mg/l of organic matter into any of the solvents listed. They must be regenerated with substances permitted for use in the preparation of foodstuffs.

These resins may be used only under the supervision of an oenologist or technician and in installations approved by the authorities of the Member States on whose territory they are used. Such authorities shall lay down the duties and responsibility incumbent on approved oenologists and technicians.

Analysis method for determining the loss of organic matter from ion exchange resins:

1. SCOPE AND AREA OF APPLICATION

The method determines the loss of organic matter from ion exchange resins.

2. DEFINITION

The loss of organic matter from ion exchange resins. The loss of organic matter is determined by the method specified.

3. PRINCIPLE

Extracting solvents are passed through prepared resins and the weight of organic matter extracted is determined gravimetrically.

4. REAGENTS

All reagents shall be of analytical quality.

Extracting solvents.

- 4.1. Distilled water or deionised water of equivalent purity.
 - 4.2. Ethanol, 15 % v/v. Prepare by mixing 15 parts of absolute ethanol with 85 parts of water (paragraph 4.1).
 - 4.3. Acetic acid, 5 % m/m. Prepare by mixing 5 parts of glacial acetic acid with 95 parts of water (paragraph 4.1).
- #### 5. APPARATUS
- 5.1. Ion exchange chromatography columns.
 - 5.2. Measuring cylinders, capacity 2 l.
 - 5.3. Evaporating dishes capable of withstanding a muffle furnace at 850 °C.
 - 5.4. Drying oven, thermostatically controlled at 105 ± 2 °C.
 - 5.5. Muffle furnace, thermostatically controlled at 850 ± 25 °C.

- 5.6. Analytical balance, accurate to 0.1 mg.
- 5.7. Evaporator, hot plate or infra-red evaporator.
6. PROCEDURE
- 6.1. Add to each of three separate ion exchange chromatography columns (paragraph 5.1) 50 ml of the ion exchange resin to be tested, washed and treated in accordance with the manufacturer's directions for preparing resins for use with food.
- 6.2. For the anionic resins, pass the three extracting solvents (paragraphs 4.1, 4.2 and 4.3) separately through the prepared columns (paragraph 6.1) at a flow rate of 350 to 450 ml/h. Discard the first litre of eluate in each case and collect the next two litres in measuring cylinders (paragraph 5.2). For the cationic resins, pass only solvents referred to in paragraphs 4.1 and 4.2 through the columns prepared for this purpose.
- 6.3. Evaporate the three eluates over a hotplate or with an infrared evaporator (paragraph 5.7) in separate evaporating dishes (paragraph 5.3) which have been previously cleaned and weighed (m_0). Place the dishes in an oven (paragraph 5.4) and dry to constant weight (m_1).
- 6.4. After recording the constant weight (paragraph 6.3), place the evaporating dish in the muffle furnace (paragraph 5.5) and ash to constant weight (m_2).
- 6.5. Calculate the organic matter extracted (paragraph 7.1). If the result is greater than 1 mg/l, carry out a blank test on the reagents and recalculate the weight of organic matter extracted.

The blank test shall be carried out by repeating the operations referred to in paragraphs 6.3 and 6.4 but using two litres of the extracting solvent, to give weights m_3 and m_4 in paragraphs 6.3 and 6.4 respectively.

7. EXPRESSION OF THE RESULTS

7.1. Formula and calculation of results

The organic matter extracted from ion exchange resins, in mg/l, is given by:

$$500 (m_1 - m_2)$$

where m_1 and m_2 are expressed in grams.

The corrected weight (mg/l) of the organic matter extracted from ion exchange resins is given by:

$$500 (m_1 - m_2 - m_3 + m_4)$$

where m_1 , m_2 , m_3 and m_4 are expressed in grams.

- 7.2. The difference in the results between two parallel determinations carried out on the same sample must not exceed 0,2 mg/l.

Appendix 5

Potassium ferrocyanide

Calcium phytateDL tartaric acid

Potassium ferrocyanide or calcium phytate, the use of which is provided for in paragraph 26 of Annex I A, or DL tartaric acid, the use of which is provided for in paragraph 29 of Annex I A, may be used only under the supervision of an oenologist or technician officially approved by the authorities of the Member State in whose territory the process is carried out, the extent of whose responsibility shall be fixed, if necessary, by the Member State concerned.

After treatment with potassium ferrocyanide or calcium phytate, the wine must contain traces of iron.

Supervision of the use of the product referred to in the first paragraph shall be governed by the provisions adopted by the Member States.

Appendix 6

Requirements for dimethyldicarbonate

AREA OF APPLICATION

Dimethyldicarbonate may be added to wine for the following purpose: microbiological stabilisation of bottled wine containing fermentable sugar.

REQUIREMENTS

- the addition must be carried out only a short time prior to bottling, defined as putting the product concerned up for commercial purposes in containers of a capacity not exceeding 60 litres,
- the treatment may only be applied to wine with a sugar content of not less than 5 g/l,
- the product used must comply with the purity criteria laid down in Directive 2008/84/EC,
- this treatment is to be recorded in the register referred to in Article 112(2) of Regulation (EC) No 479/2008.

Appendix 7

Requirements for electro dialysis treatment

The purpose is to obtain tartaric stability of the wine with regard to potassium hydrogen tartrate and calcium tartrate (and other calcium salts) by extraction of ions in supersaturation in the wine under the action of an electrical field and using membranes that are either anion-permeable or cation-permeable.

1. MEMBRANE REQUIREMENTS

- 1.1. The membranes are to be arranged alternately in a 'filter-press' type system or any other appropriate system separating the treatment (wine) and concentration (waste water) compartments.
- 1.2. The cation-permeable membranes must be designed to extract cations only, in particular K^+ , Ca^{++} .
- 1.3. The anion-permeable membranes must be designed to extract anions only, in particular tartrate anions.
- 1.4. The membranes must not excessively modify the physico-chemical composition and sensory characteristics of the wine. They must meet the following requirements:
 - they must be manufactured according to good manufacturing practice from substances authorised for the manufacture of plastic materials intended to come into contact with foodstuffs as listed in Annex II to Commission Directive 2002/72/EC⁽²⁾,
 - the user of the electro dialysis equipment must show that the membranes used meet the above requirements and that any replacements have been carried out by specialised personnel,
 - they must not release any substance in quantities endangering human health or affecting the taste or smell of foodstuffs and must meet the criteria laid down in Directive 2002/72/EC,
 - their use must not trigger interactions between their constituents and the wine liable to result in the formation of new compounds that may be toxic in the treated product.

The stability of fresh electro dialysis membranes is to be determined using a simulant reproducing the physico-chemical composition of the wine for investigation of possible migration of certain substances from them.

The experimental method recommended is as follows:

The simulant is a water-alcohol solution buffered to the pH and conductivity of the wine. Its composition is as follows:

- absolute ethanol: 11 l,
- potassium hydrogen tartrate: 380 g,
- potassium chloride: 60 g,
- concentrated sulphuric acid: 5 ml,
- distilled water: to make up 100 litres,

This solution is used for closed circuit migration tests on an electro dialysis stack under tension (1 volt/cell), on the basis of 50 l/m² of anionic and cationic membranes, until 50 % demineralisation of the solution. The effluent circuit is initiated by a 5 g/l potassium chloride solution. Migrating substances are tested for in both the simulant and the effluent.

Organic molecules entering into the membrane composition that are liable to migrate into the treated solution will be determined. A specific determination will be carried out for each of these constituents by an approved laboratory. The content in the simulant of all the determined compounds must be less than 50 g/l.

The general rules on controls of materials in contact with foodstuffs must be applied to these membranes.

2. MEMBRANE UTILISATION REQUIREMENTS

The membrane pair is formulated so that the following conditions are met:

- the pH reduction of the wine is to be no more than 0,3 pH units,
- the volatile acidity reduction is to be less than 0,12 g/l (2 meq expressed as acetic acid),
- treatment must not affect the non-ionic constituents of the wine, in particular polyphenols and polysaccharides,
- diffusion of small molecules such as ethanol is to be reduced and must not cause a reduction in alcoholic strength of more than 0,1 % vol.,
- the membranes must be conserved and cleaned by approved methods with substances authorised for use in the preparation of foodstuffs,
- the membranes are marked so that alternation in the stack can be checked,
- the equipment is to be run using a command and control mechanism that will take account of the particular instability of each wine so as to eliminate only the supersaturation of potassium hydrogen tartrate and calcium salts,
- the treatment is to be carried out under the responsibility of an oenologist or qualified technician.

The treatment is to be recorded in the register referred to in Article 112(2) of Regulation (EC) No 479/2008.

Appendix 8

Requirements for urease

1. International code for urease: EC 3-5-1-5, CAS No: 9002-13-5.
2. Activity: urease activity (active at acidic pH), to break down urea into ammonia and carbon dioxide. The stated activity is not less than 5 units/mg, one unit being defined as the amount that produces one μmol of ammonia per minute at 37 °C from 5 g/l urea at pH 4.
3. Origin: *Lactobacillus fermentum*.
4. Area of application: breaking down urea present in wine intended for prolonged ageing, where its initial urea concentration is higher than 1 mg/l.
5. Maximum dose: 75 mg of enzyme preparation per litre of wine treated, not exceeding 375 units of urease per litre of wine. After treatment, all residual enzyme activity must be eliminated by filtering the wine (pore size < 1 μm).
6. Chemical and microbiological purity specifications:

Loss on drying	Less than 10 %
Heavy metals	Less than 30 ppm
Pb	Less than 10 ppm
As	Less than 2 ppm
Total coliforms	Absent
<i>Salmonella</i> spp	Absent in 25 g sample
Aerobic count	Less than 5×10^4 cells/g

Urease used in the treatment of wine must be prepared under similar conditions to those for urease as covered by the opinion of the Scientific Committee for Food of 10 December 1998.

Appendix 9

Requirements for pieces of oak wood

PURPOSE, ORIGIN AND AREA OF APPLICATION

Pieces of oak wood are used in winemaking and ageing, including in the fermentation of fresh grapes and grape must, to pass on certain characteristics of oak wood to wine.

The pieces of oak wood must come exclusively from the *Quercus* genus.

They may be left in their natural state, or heated to a low, medium or high temperature, but they may not have undergone combustion, including surface combustion, nor be carbonaceous or friable to the touch. They may not have undergone any chemical, enzymatic or physical processes other than heating. No product may be added for the purpose of increasing their natural flavour or the amount of their extractible phenolic compounds.

LABELLING

The label must mention the origin of the botanical species of oak and the intensity of any heating, the storage conditions and safety precautions.

DIMENSIONS

The dimensions of the particles of wood must be such that at least 95 % in weight are retained by a 2 mm mesh filter (9 mesh).

PURITY

The pieces of oak wood may not release any substances in concentrations which may be harmful to health.

This treatment is to be recorded in the register referred to in Article 112(2) of Regulation (EC) No 479/2008.

Appendix 10

Requirements for the partial dealcoholisation of wine

The aim of this treatment is to produce a partially dealcoholised wine, by eliminating some of the alcohol (ethanol) in it using physical separation techniques.

Requirements

- The wines treated must have no organoleptic faults and must be suitable for direct human consumption,
- Elimination of alcohol from the wine cannot be carried out if one of the enrichment operations laid down in Annex V to Regulation (EC) No 479/2008 was applied to one of the wine products used in the preparation of the wine in question,
- Reduction of the actual alcoholic strength by volume may not be more than 2 % vol. and the actual alcoholic strength by volume of the final product must comply with that defined in point (a) of the second subparagraph of paragraph 1 of Annex IV to Regulation (EC) No 479/2008.
- The treatment is to be carried out under the responsibility of an oenologist or qualified technician,
- This treatment is to be recorded in the register referred to in Article 112(2) of Regulation (EC) No 479/2008,
- The Member States may require this treatment to be notified to the competent authorities.

Appendix 11

Requirements for treatment with PVI/PVP copolymers

The purpose of this treatment is to reduce excessively high concentrations of metals and to prevent defects caused by this excessively high content, such as ferric casse, through the addition of copolymers that adsorb these metals.

Requirements

- The added copolymers must be eliminated by filtering within two days at most of their addition to the wine, taking account of the precautionary principle.
- In the case of musts, the copolymers must be added no earlier than two days before filtering.
- The treatment is to be carried out under the responsibility of an oenologist or qualified technician.
- The adsorbant copolymers used must comply with the requirements of the International Oenological Codex published by the International Organisation of Vine and Wine, especially as regards the maximum monomer content⁽³⁾.

Appendix 12

Requirements for treatment with cation exchangers to ensure the tartaric stabilisation of the wine

The purpose is to obtain tartaric stability of the wine with regard to potassium hydrogen tartrate and calcium tartrate (and other calcium salts).

Requirements

1. The treatment must be limited to the elimination of excess cations.
 - The wine must first of all be cooled.
 - Only the minimum fraction of wine necessary to obtain stability must be treated with cation exchangers.
2. The treatment is to be carried out on acid-regenerated cation-exchanger resins.
3. All the operations are to be carried out under the responsibility of an oenologist or qualified technician. The treatment must be recorded in the register referred to in Article 112(2) of Regulation (EC) No 479/2008.
4. The cationic resins used must comply with the requirements of Regulation (EC) No 1935/2004 of the European Parliament and of the Council⁽⁴⁾, the Community and national provisions adopted thereunder and the analytical requirements laid down in Appendix 4 to this Regulation. Their use must not excessively modify the physico-chemical composition or the organoleptic characteristics of the wine and must comply with the limits set out in point 3 of the International Oenological Codex monograph 'Cation-exchange resins' published by the OIV.

- (1) [OJ L 338, 13.11.2004, p. 4.](#)
- (2) [OJ L 220, 15.8.2002, p. 18.](#)
- (3) Treatment with PVI/PVP copolymers can only occur after the purity and identification specifications for authorised copolymers have been laid down and published in the OIV's International Oenological Codex.
- (4) [OJ L 338, 13.11.2004, p. 4.](#)