



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES

Forty-Sixth Session

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**INFORMATION ON COMMERCIAL USE OF SELECTED FOOD ADDITIVES
(REPLIES TO CL 2013/8-FA, PART B, POINT 4)**

Comments of Australia, Costa Rica, European Union and OIV

AUSTRALIA

Australia would like to submit the following information in regards to the commercial use of Dipotassium tartrate (INS 336(ii)), Monopotassium tartrate (INS 336 (i)) and Potassium bisulfite (INS228) as requested in Part B, Point 4 of CL 2013/8-FA:

- Dipotassium tartrate (INS 336 (ii)) is used as an additive in winemaking in Australia.
- Monopotassium tartrate (INS 336 (i)) is used as an additive in food, and also as a processing aid during winemaking in Australia.
- Potassium bisulfite (INS 228) is used as an additive in winemaking in Australia.

COSTA RICA

Costa Rica want to extend appreciation for the opportunity for comment. Our experts have already reviewed the document however believe that Costa Rica has no information to provide.

EUROPEAN UNION

The European Union (EU) would like to inform that out of the additives listed only the following additives are permitted for use in foods in the EU in accordance with Annex II to Regulation (EC) No 1333/2008 provided they comply with the approved EU specifications (Regulation (EU) No 231/2012):

Dipotassium tartrate (INS 336(ii)), monosodium tartrate (INS 335(i)), monopotassium tartrate (INS 336(i)), potassium adipates (INS 357), potassium malate (INS 351(ii)), sodium adipates (INS 356), potassium bisulfite (INS 228) and propane (INS 944).

Hence, ammonium acetate (INS 264), ammonium adipates (INS 359), ammonium lactate (INS 328), choline salts and esters (INS 1001), chlorine dioxide (INS 926), formic acid (INS 236), potassium ascorbate (INS 303), potassium hydrogen malate (INS 351 (i)) can not be legally present on the EU market for commercial use as a food additive.

Please note that the EU list of food additives does not include processing aids and flavouring substances.

INTERNATIONAL ORGANISATION OF VINE AND WINE (OIV)

The OIV would like to provide specific comments (detailed below) on the information on the commercial use and specifications of following additives

The OIV would like to indicate that dipotassium tartrate (INS 336(ii)); monopotassium tartrate (INS 336(i)); and potassium bisulfite (INS 228) are currently used for the wine making process.

According to our information provided by our Observers, the market for the wine making process represents for

- Dipotassium tartrate (INS 336(ii)): several hundred tons
- Monopotassium tartrate (INS 336(i)):1 thousand tons
- Potassium bisulfite (INS 228): 3 thousand tons

The specifications adopted by the OIV are included in the annexes for the following substances

- Dipotassium tartrate (INS 336(ii)); See annex 1
- Monopotassium tartrate (INS 336(i)); See annex 2
- Potassium bisulfite (INS 228); See annex 3

Annex 1

POTASSIUM-L(+)- TARTRATE
Potassium-L-2,3-dihydroxybutanedioate
Dipotassium tartrate
Neutral potassium tartrate
COOK-CHOH-COOK,(H₂O)_{1/2} = 235.3
SIN No. 336 ii
(Oeno 41/2000)

1. OBJECTIVE, ORIGIN AND SCOPE OF APPLICATION

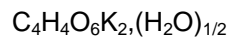
Dipotassium L-tartrate is used to deacidify musts and wines. Its use is subject to the regulatory restrictions in force in certain countries.

2. LABELING

The label should indicate product purity (greater than or equal to 98% in the product by dry weight), its safety and storage conditions, and the fact that deacidification of wine is subject to certain requirements.

3. PROPERTIES

This is the dipotassium salt of L-tartaric acid (positive rotatory power, sometimes written as L(+) tartaric), which crystallizes with a half-molecule of water:



It is made in the form of white crystals or granulated white powder.

It is highly soluble in water.

4. TESTS

4.1. Desiccation Loss (Volatile Substances)

After 4 hours of desiccation in a 105 °C oven, weight loss should not exceed 4 pp 100.

4.2. Preparing the Solution for Tests

Place 10 g of neutral potassium tartrate in a 100 ml volumetric flask and fill to the gauge line with water.

Perform the same tests on this solution as indicated in the monograph on L(+) tartaric acid and observe the same limits.

4.3. Sodium

Implementing the flame photometry technique detailed in the Compendium, determine sodium content in the test solution (4.2). (Sodium content should be less than 1 pp 100.)

4.4. Iron

Add 1 ml concentrated hydrochloric acid (R) and 2 ml potassium thiocyanate solution (concentration : 5 pp 100) (R) to 10 ml of the test solution (4.2). The red color should not be more intense than that of the control prepared using 1 ml of an iron (III) salt solution (concentration : 0.010 g iron per liter) (R), 9 ml water, and the same quantities of the same reagents. (Content should be less than 10 mg/kg.)

The iron content may also be analyzed using the atomic absorption spectrometry technique described in the Compendium.

4.5. Lead

Applying the method set forth in the Compendium, analyze the lead content in the test solution (4.2). Lead content should be less than 5 mg/kg.)

4.6. Mercury

Using the technique described in the Annex, determine the mercury content in the test solution (4.2). (Content to be less than 1 mg/kg.)

4.7. Arsenic

Using the technique described in the Annex, determine the arsenic content in the test solution (4.2). (Content to be less than 3 mg/kg.)

4.8. Distinguishing Between Potassium Tartrate and Potassium Racemate

Place 10 ml of water in a test tube with 1 ml of the test solution prepared under paragraph 4.2, 1 ml crystallizable acetic acid (R) and 2 ml of 25% calcium acetate solution (R). No white, crystalline precipitate should form instantaneously.

4.9. Oxalate

Using the technique described in the Annex, determine the oxalate content in the test solution (4.2). (The oxalate content, expressed in terms of oxalic acid, should be less than 100 mg/kg after drying.)

5. STORAGE

Potassium tartrate should be stored in hermetically sealed containers.

Annex 2

POTASSIUM HYDROGEN TARTRATE
Potassium L-2,3-dihydroxy hydrogen butanedioate
Monopotassic tartrate
Potassium bitartrate
COOH-CHOH-CHOH-COOK = 188.17
SIN No. 336 i
(Oeno 39/2000)

1. OBJECTIVE, ORIGIN AND SCOPE OF APPLICATION

This addition of potassium hydrogen tartrate, commonly called potassium bitartrate, promotes the crystallization of tartaric acid salts when cold-treating wines.

2. LABELING

The label should indicate the product's purity, size grading, and safety and storage conditions.

3. PROPERTIES

This is an anhydrous monopotassic salt of L(+) tartaric acid $C_4H_5O_6K$.

It is found in the form of white crystals or white granulated powder having a slightly acidic taste.

4. SOLUBILITY

Water at 20 °C 5.2 g/l

Water at 100 °C 61 g/l

Insoluble in alcohol

5. TESTS

5.1. Desiccation Loss (Volatile Substances)

After 4 hours of drying in an oven at 105 °C, weight loss should be no more than 1 pp 100.

5.2. Preparing the Solution for Tests

Place 10 g potassium hydrogen tartrate, 50 ml water and 1 ml concentrated hydrochloric acid in a 100 ml volumetric flask. Stir and fill to the top with water.

Perform the same tests on this solution as those indicated in the monograph on L(+) tartaric acid (with the exception of chlorides), and observe the same limits.

5.3. Sodium

Using the flame photometry technique described in the Compendium, analyze sodium content in the test solution (5.2). (Sodium content should be less than 1 pp 100,)

5.4. Iron

Add 1 ml concentrated hydrochloric acid (R) and 2 ml potassium thiocyanate solution having a concentration of 5 pp 100 (R) to 10 ml test solution (5.2). The red color produced should not be more intense than that of a control prepared using 1 ml of an iron (III) salt solution in a concentration of 0.010 g iron per liter (R), 9 ml water, and the same quantities of the same reagents (content should be less than 10 mg/kg).

Iron can also be analyzed quantitatively by atomic absorption spectrometry, in accordance with the technique described in the Compendium.

5.5. Lead

Using the technique described in the Compendium, determine lead content in the test solution (5.2). (Lead content should be less than 5 mg/kg.)

5.6. Mercury

Using the technique described in the annex determine the mercury content in the test solution (5.2). (Mercury content should be less than 1 mg/kg.)

5.7. Arsenic

Using the technique described in the annex, determine the arsenic content in the test solution (5.2). (Arsenic content should be less than 3 mg/kg.)

5.8. Oxalate

Using the technique described in the annex, determine oxalate content in the test solution (5.2). (Oxalate content, expressed in the form of oxalic acid, should be less than 100 mg/kg.)

6. STORAGE

Potassium hydrogen tartrate should be stored in hermetically sealed containers.

Annex 3

POTASSIUM HYDROGEN SULFITE

Potassium bisulfite

Potassium acid sulfite

$\text{KHSO}_3 = 120.2$

SIN No. 228

(Oeno 38/2000)

1. OBJECTIVE, ORIGIN AND SCOPE OF APPLICATION

Potassium hydrogen sulfite is used in oenology because of the proportion of sulfur dioxide it contains.

2. LABELING

The label should indicate the weight per liter or per kilogram of sulfur dioxide and the storage and safety conditions.

There are regulatory limits restricting the sulfur dioxide content in wines.

3. CENTESIMAL COMPOSITION

SO_2 53.30

K 32.53

4. PROPERTIES

Potassium hydrogen sulfite is found in the form of a colorless or slightly yellow solution obtained by passing a current sulfur dioxide through an aqueous potassium hydroxide solution.

Potassium hydrogen sulfite solutions used in wine-making usually contain between 281 and 375 g/l potassium hydrogen sulfite, these values corresponding to 150 to 200 g/l sulfur dioxide.

5. IDENTIFYING CHARACTERISTICS

Potassium hydrogen sulfite solutions yield reactions of potassium and sulfur dioxide and are slightly acidic (pH of approximately 5).

6. TESTS

The tests are identical to those detailed in the monograph on potassium anhydrous sulfite, as are the limiting content levels for lead, mercury, iron, arsenic, selenium and chlorides.

7. QUANTITATIVE ANALYSIS

Place 50 ml of cold water in a 200 ml conical flask, then add 5 ml of potassium hydrogen sulfite solution. Dilute so that the solution has a concentration of approximately 1 pp 100 SO₂ and titrate with 0.1M iodine in the presence of starch. Let n be the volume of iodine used.

The sulfur dioxide (SO₂) content of the solution, expressed in pp 100 (m/v), is $0.64 \times n$ (concentration cannot be less than 150 g/l).

8. STORAGE

Potassium hydrogen sulfite solutions containing more than 15 pp 100 (m/v) of sulfur dioxide must not be stored at low temperatures, in order to avoid the risk of crystallization.