

**Alcohol and Tobacco Tax and Trade Bureau, Treasury**

**§ 24.246**

used only in accordance with the provisions of § 24.246.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1383, as amended (26 U.S.C. 5382))

(Approved by the Office of Management and Budget under control number 1512-0298)

**§ 24.244 Use of acid to stabilize standard wine.**

Standard wine other than citrus wine, regardless of the fixed acid level, may be stabilized as a part of the finishing process by the addition of citric acid within the limitations of § 24.246. Standard wine (including citrus wine) may be stabilized by the addition of fumaric acid within the limitations of § 24.246.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1383, as amended (26 U.S.C. 5382))

**§ 24.245 Use of carbon dioxide in still wine.**

The addition of carbon dioxide to (and retention in) still wine is permitted if at the time of removal for consumption or sale the still wine does not contain more than 0.392 grams of carbon dioxide per 100 milliliters of wine. However, a tolerance of not more than 0.009 grams per 100 milliliters to the maximum limitation of carbon dioxide in still wine will be allowed where the amount of carbon dioxide in excess of 0.392 grams per 100 milliliters is due to mechanical variations which can not be completely controlled under good commercial practice. A tolerance will not be allowed where it is found that the proprietor continuously or intentionally exceeds 0.392 grams of carbon dioxide per 100 milliliters of wine or where the variation results from the use of methods or equipment determined by the appropriate TTB officer not in accordance with good commercial practice. The proprietor shall determine the amount of carbon dioxide added to wine using authorized test procedures. Penalties are provided in 26 U.S.C. 5662 for any person who, whether by manner of packaging or advertising

or by any other form of representation, misrepresents any still wine to be effervescent wine or a substitute for effervescent wine.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1331, as amended, 1381, as amended, 1407, as amended (26 U.S.C. 5041, 5367, 5662))

[T.D. ATF-299, 55 FR 24989, June 19, 1990, as amended by T.D. ATF-409, 64 FR 13683, Mar. 22, 1999]

**§ 24.246 Materials authorized for the treatment of wine and juice.**

(a) *Wine.* Materials used in the process of filtering, clarifying, or purifying wine may remove cloudiness, precipitation, and undesirable odors and flavors, but the addition of any substance foreign to wine which changes the character of the wine, or the abstraction of ingredients which will change its character, to the extent inconsistent with good commercial practice, is not permitted on bonded wine premises. The materials listed in this section are approved, as being consistent with good commercial practice in the production, cellar treatment, or finishing of wine, and where applicable in the treatment of juice, within the general limitations of this section: *Provided*, That:

(1) When the specified use or limitation of any material on this list is determined to be unacceptable by the U.S. Food and Drug Administration, the appropriate TTB officer may cancel or amend the approval for use of the material in the production, cellar treatment, or finishing of wine; and

(2) Where water is added to facilitate the solution or dispersal of a material, the volume of water added, whether the material is used singly or in combination with other water based treating materials, may not total more than one percent of the volume of the treated wine, juice, or both wine and juice, from which such wine is produced.

(b) *Formula wine.* In addition to the material listed in this section, other material may be used in formula wine if approved for such use.

**MATERIALS AUTHORIZED FOR TREATMENT OF WINE AND JUICE**

Materials and use	Reference or limitation
Acacia (gum arabic): To clarify and to stabilize wine .....	The amount used shall not exceed 2 lbs/1000 gals. (0.24 g/L of wine. 21 CFR 184.1330 (GRAS) *See footnote below.

## MATERIALS AUTHORIZED FOR TREATMENT OF WINE AND JUICE—Continued

Materials and use	Reference or limitation
Acetaldehyde: For color stabilization of juice prior to concentration.	The amount used must not exceed 300 ppm, and the finished concentrate must have no detectable level of the material. 21 CFR 182.60 (GRAS).
Activated carbon:	
To assist precipitation during fermentation .....	27 CFR 24.176. GRAS per FDA advisory opinion dated 1/26/79.
To clarify and to purify wine .....	The amount used to clarify and purify wine shall be included in the total amount of activated carbon used to remove excessive color in wine. 27 CFR 24.241 and 24.242 (GRAS).
To remove color in wine and/or juice from which the wine was produced.	The amount used to treat the wine, including the juice from which the wine was produced, shall not exceed 25 lbs/1000 gal. (3.0 g/L). If the amount necessary exceeds this limit, a notice is required pursuant to 27 CFR 24.242 (GRAS).
Albumen (egg white): Fining agent for wine .....	May be prepared in a light brine 1 oz. (28.35 grams) potassium chloride, 2 lbs (907.2 grams) egg white, 1 gal. (3.785 L) of water. Usage not to exceed 1.5 gals. of solution per 1,000 gals. of wine. (GRAS).
Alumino-silicates (hydrated) e.g., Bentonite (Wyoming clay) and Kaolin: To clarify and to stabilize wine or juice.	21 CFR §§ 182.2727, 182.2729, 184.1155 (GRAS) and 186.1256. GRAS per FDA advisory opinion dated July 26, 1985.
Ammonium phosphate ( <i>mono</i> - and <i>di</i> basic): Yeast nutrient in wine production and to start secondary fermentation in the production of sparkling wines.	The amount used shall not exceed 8 lbs. per 1000 gals. (0.96 g/L) of wine. 21 CFR 184.1141 (GRAS).
Ascorbic acid <i>iso</i> -ascorbic acid (erythorbic acid): To prevent oxidation of color and flavor components of juice and wine.	May be added to grapes, other fruit (including berries), and other primary wine making materials, or to the juice of such materials, or to the wine, within limitations which do not alter the class or type of the wine. 21 CFR 182.3013 and 182.3041 (GRAS).
Calcium carbonate (with or without calcium salts of tartaric and malic acids):	
To reduce the excess natural acids in high acid wine, and in juice prior to or during fermentation..	The natural or fixed acids shall not be reduced below 5 g/L. 21 CFR 184.1069 and 184.1099, and 184.1191 (GRAS).
A fining agent for cold stabilization. ....	The amount used shall not exceed 30 lbs/1000 gals. (3.59 g/L) of wine.
Calcium pantothenate: Yeast nutrient to facilitate fermentation of apple wine.	The amount used must not exceed 0.1 lb. per 25,000 gallons. 21 CFR 184.1212 (GRAS).
Calcium sulfate (gypsum): To lower pH in sherry wine. ....	The sulfate content of the finished wine shall not exceed 2.0g/L, expressed as potassium sulfate. 27 CFR 24.214. 21 CFR 184.1230 (GRAS).
Carbon dioxide (including food grade dry ice): To stabilize * * * and to preserve wine.	27 CFR 24.245. 21 CFR 184.1240 (GRAS).
Casein, potassium salt of casein: To clarify wine .....	GRAS per FDA opinions of 02/23/60 and 08/25/61. 27 CFR 24.243.
Citric acid:	
To correct natural acid deficiencies in wine .....	27 CFR 24.182 and 24.192. 21 CFR 182.1033 (GRAS).
To stabilize wine other than citrus wine .....	The amount of citric acid shall not exceed 5.8 lbs/1000 gals. (0.7 g/L). 27 CFR 24.244. 21 CFR 182.1033 (GRAS).
Copper sulfate: To remove hydrogen sulfide and/or mercaptans from wine.	The quantity of copper sulfate added (calculated as copper) must not exceed 6 parts copper per million parts of wine (6.0 mg/L). The residual level of copper in the finished wine must not exceed 0.5 parts per million (0.5 mg/L). 21 CFR 184.1261 (GRAS).
Defoaming agents (polyoxyethylene 40 monostearate, silicon dioxide, dimethylpoly-siloxane, sorbitan monostearate, glyceryl mono-oleate and glyceryl dioleate): To control foaming, fermentation adjunct.	Defoaming agents which are 100% active may be used in amounts not exceeding 0.15 lbs/1000 gals. (0.018 g/L) of wine. Defoaming agents which are 30% active may be used in amounts not exceeding 0.5 lbs/1000 gals. (0.06 g/L) of wine. Silicon dioxide shall be completely removed by filtration. The amount of silicon remaining in the wine shall not exceed 10 parts per million. 21 CFR 173.340 and 184.1505.
Dimethyl dicarbonate:	
To sterilize and to stabilize wine, dealcoholized wine, and low alcohol wine.	Must meet the conditions prescribed by FDA in 21 CFR 172.133. DMDC may be added to wine, dealcoholized wine, and low alcohol wine in a cumulative amount not to exceed 200 parts per million (ppm).
Enzymatic activity: Various uses as shown below .....	The enzyme preparation used shall be prepared from nontoxic and nonpathogenic microorganisms in accordance with good manufacturing practice and be approved for use in food by either FDA regulation or by FDA advisory opinion.

## MATERIALS AUTHORIZED FOR TREATMENT OF WINE AND JUICE—Continued

Materials and use	Reference or limitation
Carbohydrase ( <i>alpha</i> -Amylase): To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from <i>Aspergillus niger</i> , <i>Aspergillus oryzae</i> , <i>Bacillus subtilis</i> , or barley malt per FDA advisory opinion of 8/18/83 or from <i>Rhizopus oryzae</i> per 21 CFR 173.130 or from <i>Bacillus licheniformis</i> per 21 CFR 184.1027.
Carbohydrase ( <i>beta</i> -Amylase): To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from barley malt per FDA advisory opinion dated 8/18/83.
Carbohydrase (Glucoamylase, Amylogluco-sidase): To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from <i>Aspergillus niger</i> or <i>Aspergillus oryzae</i> per FDA advisory opinion dated 8/18/83 or from <i>Rhizopus oryzae</i> per 21 CFR 173.130 or from <i>Rhizopus niveus</i> per 21 CFR 173.110.
Carbohydrase (pectinase, cellulase, hemicellulase): To facilitate separation of juice from the fruit.	The enzyme activity used must be derived from <i>Aspergillus aculeatus</i> . FDA advisory opinion dated 12/19/1996.
Catalase: To clarify and to stabilize wine .....	The enzyme activity used shall be derived from <i>Aspergillus niger</i> or bovine liver per FDA advisory opinion dated 8/18/83 (GRAS).
Cellulase: To clarify and to stabilize wine and to facilitate separation of the juice from the fruit.	The enzyme activity used shall be derived from <i>Aspergillus niger</i> per FDA advisory opinion dated 8/18/83 (GRAS).
Cellulase (beta-glucanase): To clarify and filter wine ....	The enzyme activity must be derived from <i>Trichoderma longibrachiatum</i> . The amount used must not exceed 3 g/hl. 21 CFR 184.1250 (GRAS).
Glucose oxidase: To clarify and to stabilize wine .....	The enzyme activity used shall be derived from <i>Aspergillus niger</i> per FDA advisory opinion of 8/18/83 (GRAS).
Lysozyme: To stabilize wines from malolactic acid bacterial degradation..	The amount used must not exceed 500 mg/L. FDA advisory opinion dated 12/15/93.
Pectinase: To clarify and to stabilize wine and to facilitate separation of juice from the fruit.	The enzyme activity used shall be derived from <i>Aspergillus niger</i> per FDA advisory opinion dated 8/18/83 (GRAS).
Protease (general): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from <i>Aspergillus niger</i> or <i>Bacillus subtilis</i> per FDA advisory opinion dated 08/18/83 or from <i>Bacillus licheniformis</i> per 21 CFR 184.1027 (GRAS).
Protease (Bromelin): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from <i>Ananas comosus</i> or <i>Ananas bracteatus</i> (L) per FDA advisory opinion dated 08/18/83 (GRAS).
Protease (Ficin): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from <i>Ficus spp.</i> per FDA advisory opinion dated 08/18/83 (GRAS).
Protease (Papain): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from <i>Carica papaya</i> (L) per 21 CFR 184.1585 (GRAS).
Protease (Pepsin): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from porcine or bovine stomachs per FDA advisory opinion dated 08/18/83 (GRAS).
Protease (Trypsin): To reduce or to remove heat labile proteins.	The enzyme activity used shall be derived from porcine or bovine pancreas per FDA advisory opinion dated 08/18/83 (GRAS).
Urease: To reduce levels of naturally occurring urea in wine to help prevent the formation of ethyl carbamate.	The urease enzyme activity shall be derived from <i>Lactobacillus fermentum</i> per 21 CFR 184.1924. Use is limited to not more than 200 mg/L and must be filtered prior to final packaging of the wine.
Ethyl maltol: To stabilize wine .....	Use authorized at a maximum level of 100mg/L in all standard wines except natural wine produced from <i>Vitis vinifera</i> grapes. FDA advisory opinion dated 12/1/86.
Ferrocyanide compounds (sequestered complexes): To remove trace metal from wine and to remove objectionable levels of sulfide and mercaptans from wine.	No insoluble or soluble residue in excess of 1 part per million shall remain in the finished wine and the basic character of the wine shall not be changed by such treatment. GRAS per FDA advisory opinion of 06/22/82.
Ferrous sulfate: To clarify and to stabilize wine .....	The amount used shall not exceed 3 ozs./1000 gals. (0.022 g/L) of wine. 21 CFR 184.1315 (GRAS).
Fumaric acid: To correct natural acid deficiencies in grape wine .....	The fumaric acid content of the finished wine shall not exceed 25 lbs/1000 gals (3.0 g/L). 27 CFR 24.182 and 24.192. 21 CFR 172.350.
To stabilize wine .....	The fumaric acid content of the finished wine shall not exceed 25 lbs/1000 gals (3.0 g/L). 27 CFR 24.244. 21 CFR 172.350.
Gelatin (food grade): To clarify juice or wine .....	(GRAS).
Granular cork: To smooth wine .....	The amount used shall not exceed 10 lbs/1000 gals. of wine (1.2 g/L). GRAS per FDA advisory opinion dated 02/25/85.
Isinglass: To clarify wine .....	GRAS per FDA advisory opinion dated 02/25/85.
Lactic acid: To correct natural acid deficiencies in grape wine ..	27 CFR 24.182 and 24.192.
Malic acid: To correct natural acid deficiencies in juice or wine ..	21 CFR 184.1061 (GRAS).
	27 CFR 24.182 and 24.192. 21 CFR 184.1069 (GRAS).

## MATERIALS AUTHORIZED FOR TREATMENT OF WINE AND JUICE—Continued

Materials and use	Reference or limitation
Malo-lactic bacteria: To stabilize grape wine .....	Malo-lactic bacteria of the type <i>Leuconostoc oenos</i> may be used in treating wine. GRAS per FDA advisory opinion dated 02/25/85.
Maltol: To stabilize wine .....	Use authorized at a maximum level of 250 mg/L in all standard wine except natural wine produced from <i>Vitis vinifera</i> grapes. FDA advisory opinion dated 12/1/86.
Milk products (pasteurized whole, skim, or half-and-half): Fining agent for grape wine or sherry .....	The amount used must not exceed 2.0 liters of pasteurized milk products per 1,000 liters (0.2 percent V/V) of wine.
To remove off flavors in wine .....	The amount used must not exceed 10 liters of pasteurized milk products per 1,000 liters (1 percent V/V) of wine. 21 CFR 184.1540 (GRAS).
Nitrogen gas: To maintain pressure during filtering and bottling or canning of wine and to prevent oxidation of wine.	
Oak chips or particles, uncharred and untreated: To smooth wine.	21 CFR 172.510.
Oxygen and compressed air: May be used in juice and wine .....	None.
Polyvinyl-pyrrolidone (PVPP): To clarify and to stabilize wine and to remove color from red or black wine or juice.	The amount used to treat the wine, including the juice from which the wine was produced, shall not exceed 60 lbs/1,000 gals. (7.19 g/L) and shall be removed during filtration. PVPP may be used in a continuous or batch process. The finished wine shall retain vinous character and shall have color of not less than 0.6 Lovibond in a one-half inch cell or not more than 95 percent transmittance per **AOAC Method 11.003–11.004 (14th Ed.). 21 CFR 173.50.
Potassium bitartrate: To stabilize grape wine .....	The amount used shall not exceed 35 lbs/1000 gals. (4.19 g/L) of grape wine. 21 CFR 184.1077 (GRAS).
Potassium carbonate and/or potassium bicarbonate To reduce excess natural acidity in wine, and in juice prior to or during fermentation.	The natural or fixed acids shall not be reduced below 5 parts per thousand (5 g/L). 21 CFR 184.1619 and 184.1613 (GRAS).
Potassium citrate: pH control agent and sequestrant in treatment of citrus wines.	The amount of potassium citrate shall not exceed 25 lbs/1000 gals. (3.0 g/L) of finished wine. 27 CFR 24.182. 21 CFR 182.1625 and 182.6625 (GRAS).
Potassium meta-bisulfite: To sterilize and to preserve wine .....	The sulfur dioxide content of the finished wine shall not exceed the limitations prescribed in 27 CFR 4.22. 21 CFR 182.3637 (GRAS).
Silica gel (colloidal silicon dioxide): To clarify wine or juice .....	Use must not exceed the equivalent of 20 lbs. colloidal silicon dioxide at a 30% concentration per 1000 gals. of wine. (2.4 g/L). Silicon dioxide must be completely removed by filtration. 21 CFR 172.480.
Sorbic acid and potassium salt of sorbic acid: To sterilize and to preserve wine; to inhibit mold growth and secondary fermentation.	The finished wine shall contain not more than 300 milligrams of sorbic acid per liter of wine. 21 CFR 182.3089 and 182.3640 (GRAS).
Soy flour (defatted): Yeast nutrient to facilitate fermentation of wine.	The amount used shall not exceed 2 lbs/1000 gals. (0.24 g/L) of wine. (GRAS).
Sulfur dioxide: To sterilize and to preserve wine .....	The sulfur dioxide content of the finished wine shall not exceed the limitations prescribed in 27 CFR 4.22(b)(1). 21 CFR 182.3862 (GRAS).
Tannin: To adjust tannin content in apple juice or in apple wine	The residual amount of tannin shall not exceed 3.0 g/L, calculated as gallic acid equivalents (GAE). GRAS per FDA advisory opinions dated 4/6/59 and 3/29/60. Total tannin shall not be increased by more than 150 milligrams/liter by the addition of tannic acid (polygalloylglucose).
To clarify or to adjust tannin content of juice or wine (other than apple).	The residual amount of tannin, calculated in gallic acid equivalents, shall not exceed 0.8 g/L in white wine and 3.0 g/L in red wine. Only tannin which does not impart color may be used in the cellar treatment of juice or wine. GRAS per FDA advisory opinions dated 4/6/59 and 3/29/60. Total tannin shall not be increased by more than 150 milligrams/liter by the addition of tannic acid (polygalloylglucose).
Tartaric acid: To correct natural acid deficiencies in grape juice/wine and to reduce the pH of grape juice/wine where ameliorating material is used in the production of grape wine.	Use as prescribed in 27 CFR 24.182 and 24.192. 21 CFR 184.1099 (GRAS).
Thiamine hydrochloride: Yeast nutrient to facilitate fermentation of wine.	The amount used shall not exceed 0.005 lb/1000 gals. (0.6 mg/L) of wine or juice. 21 CFR 184.1875 (GRAS).
Yeast, autolyzed: Yeast nutrient to facilitate fermentation in the production of grape or fruit wine.	21 CFR 172.896 and 184.1983. GRAS per FDA advisory opinion of 10/06/59.

## MATERIALS AUTHORIZED FOR TREATMENT OF WINE AND JUICE—Continued

Materials and use	Reference or limitation
Yeast, cell wall/membranes of autolyzed yeast: To facilitate fermentation of juice/wine.	The amount used shall not exceed 3 lbs/1000 gals. (0.36 g/L) of wine or juice. (GRAS).

\* GRAS—An acronym for “generally recognized as safe.” The term means that the treating material has an FDA listing in Title 21, Code of Federal Regulations, Part 182 or Part 184, or is considered to be generally recognized as safe by advisory opinion issued by the U.S. Food and Drug Administration.

\*\* AOAC—Association of Official Analytical Chemists.

\*\*\* To stabilize—To prevent or to retard unwanted alteration of chemical and/or physical properties.

(Sec. 201, Pub. L. 85-859, 72 Stat. 1383, as amended (26 U.S.C. 5381, 5382, 5385, 5386, and 5387))

[T.D. ATF-299, 55 FR 24989, June 19, 1990, as amended by T.D. ATF-312, 56 FR 31079, July 9, 1991; T.D. ATF-350, 58 FR 52231, Oct. 7, 1993; T.D. ATF-350, 60 FR 38959, July 31, 1995; T.D. ATF-371, 61 FR 21079, May 9, 1996; T.D. ATF-409, 64 FR 13683, Mar. 22, 1999; T.D. TTB-17, 69 FR 67643, Nov. 19, 2004; 72 FR 51709, Sept. 11, 2007]

### § 24.247 Materials authorized for the treatment of distilling material.

The materials listed in this section as well as the materials listed in § 24.246 are approved as being acceptable in good commercial practice for use by proprietors in the treatment of distilling material within the limita-

tions specified in this section: *Provided*, That when the specified use or limitation of any material on this list is determined to be unacceptable by the U.S. Food and Drug Administration, the appropriate TTB officer may cancel or amend the approval for use of the material in the treatment of distilling material.

Materials	Use	Reference or limitation
Ammonium phosphate ( <i>mono</i> - and <i>di</i> basic).	Yeast nutrient in distilling material .....	The amount used shall not exceed 10 lbs/1000 gals. (1.2 g/L). 21 CFR 184.1141 (GRAS). <sup>1</sup> See footnote below.
Benzoic acid, potassium and sodium salts of benzoic acid.	To prevent fermentation of the sugar in wine being accumulated as distilling material.	The amount used shall not exceed 0.1% (w/v) as benzoic acid. GRAS per FDA advisory opinions dated 9/22/82 and 9/8/83. 21 CFR 184.1021 and 184.1733 (GRAS).
Enzyme activity .....	.....	The enzyme preparation used shall be prepared from nontoxic and nonpathogenic microorganisms in accordance with good manufacturing practice and be approved for use in food by either FDA regulation or by FDA advisory opinion.
Carbohydrase ( <i>alpha</i> -Amylase).	To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from <i>Aspergillus niger</i> , <i>Aspergillus oryzae</i> , <i>Bacillus subtilis</i> , or barley malt per FDA advisory opinion of 8/18/83 or from <i>Rhizopus oryzae</i> per 21 CFR 173.130 or from <i>Bacillus licheniformis</i> per 21 CFR 184.1027.
Carbohydrase ( <i>beta</i> -Amylase).	To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from barley malt per FDA advisory opinion dated 8/18/83.
Carbohydrase (Glucoamylase, Amyloglucosidase).	To convert starches to fermentable carbohydrates.	The amylase enzyme activity shall be derived from <i>Aspergillus niger</i> or <i>Aspergillus oryzae</i> per FDA advisory opinion dated 8/18/83 or from <i>Rhizopus oryzae</i> per 21 CFR 173.130 or from <i>Rhizopus niveus</i> per 21 CFR 173.110.
Copper sulfate .....	To eliminate hydrogen sulfide and mercaptans.	The finished brandy or wine spirits produced from distilling material to which copper sulfate has been added shall not contain more than 2 parts per million (2 mg/L) residual copper. GRAS per FDA advisory opinion of 7/23/69.
Hydrogen peroxide .....	To reduce the bisulfite aldehyde complex in distilling material.	The amount used shall not exceed 200 parts per million. 21 CFR 184.1366 (GRAS).
Potassium permanganate .....	Oxidizing agent .....	The finished brandy or wine spirits produced from distilling material to which potassium permanganate has been added must be free of chemical residue resulting from such treatment. (GRAS)
Sodium hydroxide .....	Acid neutralizing agent .....	The finished brandy or wine spirits produced from distilling material to which sodium hydroxide has been added must be free of chemical residue resulting from such treatment. 21 CFR 184.1763 (GRAS).