

2009 TTB Expo Presentation

Wine Treating Materials and Processes

Presented by

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Background

- Approved wine treating materials are listed in 27 CFR 24.246
- Approved wine treating processes are listed in 27 CFR 24.248

Overview

- Additives
- Processing Aids
- Processes
- New uses

Additives

Treating Materials

- Additives:
 - Acidulents (Acids)
 - Deacidifiers
 - pH adjusters
 - Preservatives/Sterilizers
 - Others

Acidulents (Acids)

- Ascorbic
- Citric
- Malic
- Lactic
- Tartaric
- Fumaric

Fixed Acidity

- Grape Wines (tartaric acid)
- $FA \text{ (g/L)} = TA - 1.25 * VA$
- Apple Wines (malic acid)
- $FA \text{ (g/L)} = TA - 1.12 * VA$
- Citrus Wines (citric acid)
- $FA \text{ (g/L)} = TA - 1.17 * VA$
- Berry Wines (malic or citric acid)

Deacidifiers

- Calcium carbonate
- Potassium carbonate
- Potassium bicarbonate

pH Adjusters

- Calcium sulfate
- Potassium citrate

Preservatives/Sterilizers

- Dimethyl dicarbonate
- Potassium meta-bisulfite
- Sorbic acid
- Sulfur dioxide

Others

- Carbon Dioxide
- Copper sulfate
- Ethyl maltol, maltol
- Granular cork
- Oak chips
- Tannin

Processing Aids

Treating Materials

- Processing Aids:
 - Clarifying/fining agents
 - Enzymes
 - Filter aids
 - Yeast nutrients
 - Others

Clarifying/Fining Agents

- Acacia (gum arabic)
- Activated carbon
- Albumen (egg white)
- Alumino-silicates (Bentonite and Kaolin)
- Casein
- Ferrous sulfate
- Gelatin

Clarifying/Fining Agents (Continued)

- Isinglass
- Milk
- PVPP
- Silica gel
- Tannin

Enzymes

- Carbohydrases
- Catalase
- Cellulases
- Glucose oxidase
- Lysozyme
- Pectinase
- Proteases
- Urease

Filter Aids

- 27 CFR 24.243:
 - Inert fibers, pulps, earths, or similar material
 - Agar-agar
 - Carrageenan
 - Cellulose
 - Diatomaceous earth

Yeast Nutrients

- Ammonium phosphate
- Calcium pantothenate
- Soy flour
- Thiamine hydrochloride
- Yeast, autolyzed
- Yeast, cell wall

Others

- Defoaming agents
- Malo-lactic bacteria
- Potassium bitartrate

Processes

Processes

- Performed at a bonded winery
- Performed at a distilled spirits plant
 - Alcohol reduction

27 CFR 24.248

Processes at a BW

- Electrodialysis
- Elimination of SO₂
- Ion exchange
- Metal reducing sheets

Processes at a BW

(Continued)

- Nanofiltration (reduction of VA)
- Reverse osmosis (reduction of off-flavors)
- Sulfide reducing sheets
- Thermal gradient processing
- Ultrafiltration

Processes at a DSP

- Osmotic transport
- Reverse Osmosis
- Spinning Cone
- Thin-film evaporation

New Uses

How to Get Approval

- The manufacturer must get FDA approval for all materials that come in contact with the wine.
 - You may want to attend the FDA GRAS Session, Fri. 1:30-2:30
- The winery will write a letter to TTB asking to experiment with the new treating material or process.

Approval to Experiment

- Name and description of the material or process
- Purpose, manner, and extent to which the material or process is to be used together with any technical bulletin or other pertinent information relative to the material or process
- Documentary evidence of FDA acceptance of the material for its intended purpose in the amounts proposed for the particular treatment contemplated
- Vintage, varietal, appellation of origin and gallons of the experiment

Approval to Experiment (Continued)

- Recommended maximum and minimum amounts, if any, of the material proposed to be used in the treatment and a statement as to the volume of water required, if any, to facilitate addition of the material or operation of the process
- Statement that the proposed material or process is consistent with good commercial practice
- Two 750 ml samples representative of the wine before and after treatment
- TTB will determine if the experimentally treated wine can be sold

Application for Use of New Materials

- Name and description of the material or process
- Purpose, manner, and extent to which the material or process is to be used together with any technical bulletin or other pertinent information relative to the material or process
- Documentary evidence of FDA acceptance of the material for its intended purpose in the amounts proposed for the particular treatment contemplated

Application for Use of New Materials

(Continued)

- A sample, if a proposed material
- Test results of any laboratory-scale pilot study conducted by the winemaker in testing the material and an evaluation of the product and of the treatment, including the results of tests of the shelf life of the treated wine
- Vintage, varietal, appellation of origin, and gallons of the experiment

Application for Use of New Materials

(Continued)

- A tabulation of pertinent information derived from the testing program conducted by the chemical manufacturer demonstrating the function of the material or process
- A list of all chemicals used in compounding the treating material and the quantity of each component
- Recommended maximum and minimum amounts, if any, of the material proposed to be used in the treatment and a statement as to the volume of water required, if any, to facilitate the addition of the material or operation of the process

Application for Use of New Materials

(Continued)

- Two 750 ml samples representative of the wine before and after treatment
- A statement that the proposed material or process is consistent with good commercial practice

Approval for On-Going Use

- Once TTB has received enough analytical data from the experiments, we will make a determination to allow on-going use.
- Wineries apply by letter for continuing approval to use material or process as needed pending rulemaking.
- May be revoked as a result of rulemaking.

Approved for On-Going Use

- Higher usage rates for acacia (gum arabic)
- PVPP/PVI polymer
- Reverse osmosis/osmotic transport

Records

- Acid Record
- Bulk Still Wine Record
- Carbon Dioxide Record
- Chemical Usage Record
- Decolorizing Material Record
- Experimental Use Records

Reminder

Just because ...

- It is available for purchase does not mean it is authorized for use.
- It is authorized for one use does not mean it is authorized for all uses.

Contact Information

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