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Cherry Juice

DEFINITION

Cherry Juice is the liquid expressed from the fresh ripe fruit of *Prunus cerasus* L. (Fam. Rosaceae). It contains NLT 1.0% malic acid ($C_4H_6O_5$).

Coarsely crush washed, stemmed, unpitted, sour cherries in a grinder to break the pits but not mash the kernels. Dissolve 0.1% Benzoic Acid in the mixture, and allow to stand at room temperature until a small portion of the filtered Juice, when mixed with one-half of its volume of alcohol, does not become cloudy within 30 min. Press the Juice from the mixture, and filter it.

IDENTIFICATION

• **A.**

Sample: 5 mL

Analysis: Add lead acetate TS to the *Sample* until the mixture, when filtered, gives no further precipitation with the lead acetate solution. Filter, and to the clear filtrate add 5 mL of a 100-mg/mL sodium oxalate solution to remove the excess lead. Filter, add 5 mL of alkaline cupric tartrate TS to 5 mL of the clear filtrate, and warm.

Acceptance criteria: A red precipitate is formed.

OTHER COMPONENTS

• **Malic Acid**

Solution A: 6 N ammonium hydroxide and water (2:98)

Sample: 10.0 mL

Titrimetric system

(See *Titrimetry* ⟨541⟩.)

Mode: Direct titration

Titrant: 0.1 N potassium permanganate VS

Endpoint detection: Visual

Analysis: Place the *Sample* in a 125-mL flask, and add 1 g of calcium carbonate. Heat on a steam bath for 15 min, mixing occasionally, and pass through a filter. Wash the filter with five 5-mL portions of water, and to the combined filtrate and washings add 1 mL of 6 N ammonium hydroxide and 15 mL of ammonium oxalate TS. Heat on a steam bath for 15 min, pass through hardened filter paper, and wash the flask and the filter with five 5-mL portions of *Solution A*. Puncture the filter paper, and wash the precipitate into the same flask by means of hot water, followed by 30 mL of 12 N sulfuric acid. Heat the solution to 80°. Titrate with *Titrant*. Each mL of *Titrant* is equivalent to 6.704 mg of malic acid ($C_4H_6O_5$).

Acceptance criteria: NLT 1.0%

IMPURITIES

• **Residue on Ignition** ⟨281⟩**:** 0.35%–0.55%

Change to read:

• ▲**Arsenic,** ⟨211⟩*, Procedures, Procedure 1*▲ (CN 1-Jun-2023)

Sample solution: To 10 mL in a Kjeldahl flask add 5 mL of nitric acid and 5 mL of sulfuric acid, and heat the mixture until the volume is reduced to 5 mL and the color becomes brownish or black. Add a small portion of nitric acid, and continue the heating, adding small portions of nitric acid as often as browning recurs, until the organic matter is destroyed and dense, white fumes are liberated. Dilute the solution with about 10 mL of water, add 200 mg of ammonium oxalate, and continue the heating until dense, white fumes again are evolved and the solution is colorless to pale yellow. Cool, cautiously add water to make 20 mL, and mix.

Acceptance criteria: NMT 0.3 µg/g

Change to read:

• ▲**Lead** ⟨251⟩*, Procedures, Procedure 1*▲ (CN 1-Jun-2023)

Test preparation: Add 1.0 mL of Juice to 10 mL of nitric acid in a 250-mL conical flask, and boil for 5–10 min. Cool in an ice bath, and transfer to a separator with the aid of 5 mL of lead-free water.

Analysis: Proceed as directed in the chapter, except use 15 mL of *Ammonium Citrate Solution*, 500 µL of *Hydroxylamine Hydrochloride Solution*, and 3 mL of *Potassium Cyanide Solution*.

Acceptance criteria: NMT 5 µg/mL

SPECIFIC TESTS

- **Specific Gravity ⟨841⟩:** 1.045–1.075
- **Refractive Index ⟨831⟩:** NLT 1.350
- **pH ⟨791⟩:** 3.0–4.0
- **Limit of Nonvolatile Residue**

  Sample: 5.0 mL

  Analysis: Evenly spread the *Sample* over the bottom of a tared half Petri dish, and place on a steam bath for 1 h. Dry in a vacuum desiccator over silica gel for 16 h.

  Acceptance criteria: The weight of the residue is NLT 500 mg. NMT 9.5% is found.
- **Limit of Volatile Acids**

  Sample: 25 mL

  Analysis: Distill the *Sample* with steam to obtain 100 mL of distillate. Add phenolphthalein TS, and titrate with 0.10 N sodium hydroxide.

  Acceptance criteria: NMT 1.5 mL is required.

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Package in tight, light-resistant containers, and prevent exposure to excessive heat.
- **Labeling:** The label states the Latin binomial name and, following the official name, the part of the plant source from which the article was derived.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
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Chromatographic Database Information: Chromatographic Database

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