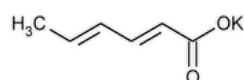


Status: Currently Official on 16-Feb-2025
 Official Date: Official as of 01-Nov-2020
 Document Type: NF Monographs
 DocId: GUID-C8AFACAF-0D82-45A5-BC8D-58739745E9CE_4_en-US
 DOI: https://doi.org/10.31003/USPNF_M68040_04_01
 DOI Ref: eh3w2

© 2025 USPC
 Do not distribute

Potassium Sorbate

Change to read:



$C_6H_7KO_2$ 150.22

2,4-Hexadienoic acid, (E,E)-, potassium salt;

▲ Potassium (2E,4E)-hexa-2,4-dienoate; ▲ (NF 1-May-2020)

Potassium (E,E)-sorbate ▲ (NF 1-May-2020) CAS RN®: 590-00-1; .24634-61-5.

DEFINITION

Change to read:

Potassium Sorbate contains NLT 98.0% and NMT ▲102.0% ▲ (NF 1-May-2020) of potassium sorbate ($C_6H_7KO_2$), calculated on the dried basis.

IDENTIFICATION

- A. [IDENTIFICATION TESTS—GENERAL \(191\)](#), [Chemical Identification Tests, Potassium](#)

Sample: Dissolve 1 g of Potassium Sorbate in 10 mL of water.

Acceptance criteria: Meets the requirements

Change to read:

- B. ▲ [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy](#): 197A or 197K ▲ (NF 1-May-2020)

ASSAY

Delete the following:

▲ Procedure

Sample: 300 mg of Potassium Sorbate

Blank: 40 mL of glacial acetic acid

Titrimetric system

(See [Titrimetry \(541\)](#).)

Mode: Direct titration

Titrant: 0.1 N perchloric acid VS

Endpoint detection: Visual

Analysis: Dissolve the *Sample* in 40 mL of glacial acetic acid, warming, if necessary, to dissolve the solution. Cool to room temperature, and add 1 drop of crystal violet TS. Titrate with *Titrant* to a blue-green endpoint. Perform a blank determination.

Calculate the percentage of potassium sorbate ($C_6H_7KO_2$) in the *Sample* taken:

$$\text{Result} = \{(V_s - V_b) \times N \times F\} / W \times 100$$

V_s = *Titrant* consumed by the *Sample* (mL)

V_b = *Titrant* consumed by the *Blank* (mL)

N = actual normality of the *Titrant* (mEq/mL)

F = equivalency factor, 150.2 mg/mEq

W = Sample weight (mg)

Acceptance criteria: 98.0%–101.0% on the dried basis ▲ (NF 1-May-2020)

Add the following:

▲ • **Procedure 1: Content of Potassium Sorbate**

Solution A: 0.1% (v/v) [trifluoroacetic acid](#) in water

Solution B: 0.1% (v/v) [trifluoroacetic acid](#) in [methanol](#)

Mobile phase: See [Table 1](#).

Table 1

Time (min)	Solution A (%)	Solution B (%)
0	75	25
17.0	75	25
18.0	5	95
23.0	5	95
23.1	75	25
30.0	75	25

Diluent: Water and [methanol](#) (1:1, v/v)

System suitability solution: Prepare 0.1 mg/mL of [USP Potassium Sorbate RS](#) in *Diluent* first and then treat the solution with UV irradiation to generate ~1% degradation of potassium sorbate (based on area%).¹

Standard solution: 0.1 mg/mL of [USP Potassium Sorbate RS](#) in *Diluent*

Sample solution: 0.1 mg/mL of Potassium Sorbate in *Diluent*

Chromatographic system

(See [Chromatography \(621\), System Suitability](#).)

Mode: LC

Detector: UV 264 nm

Column: 4.6-mm × 15-cm; 3.5-μm packing [L1](#)

Column temperature: 40°

Flow rate: 1.0 mL/min

Injection volume: 10 μL

Run time: 30 min

System suitability

Samples: *System suitability solution* and *Standard solution*

[NOTE—The approximate relative retention times of related substances are listed in [Table 2](#).]

Suitability requirements

Resolution: NLT 1.5 between potassium sorbate and potassium sorbate *trans, cis* isomer, *System suitability solution*

Tailing factor: NMT 2.0, determined from potassium sorbate, *Standard solution*

Relative standard deviation: NMT 2.0%, determined from potassium sorbate, *Standard solution*

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of potassium sorbate in the sample taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

r_U = peak area of potassium sorbate from the *Sample solution*

r_S = peak area of potassium sorbate from the *Standard solution*