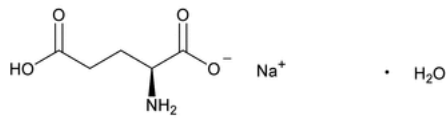


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Monosodium Glutamate



$C_5H_8NNaO_4 \cdot H_2O$ 187.13
L-Glutamic acid, sodium salt, hydrate;
Monosodium L-glutamate, hydrate CAS RN®: 6106-04-3.

DEFINITION

Monosodium Glutamate contains NLT 99.0% and NMT 100.5% of monosodium glutamate ($C_5H_8NNaO_4 \cdot H_2O$).

IDENTIFICATION

- **A. [SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy: 197A](#)**
- **B. [IDENTIFICATION TESTS—GENERAL \(191\)](#), [Sodium](#):** It meets the requirements of test A.

ASSAY

PROCEDURE

Sample: 250 mg

Titrimetric system

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

Mode: Direct titration

Titrant: [0.1 N perchloric acid VS](#)

Blank: 100 mL of [glacial acetic acid](#) with a few drops of water

Endpoint detection: Potentiometric

Analysis: Wet the *Sample* with a few drops of water. Dissolve in 100 mL of [glacial acetic acid](#). Titrate with [0.1 N perchloric acid VS](#). Perform a blank determination.

Calculate the percentage of monosodium glutamate ($C_5H_8NNaO_4 \cdot H_2O$) in the *Sample* taken:

$$\text{Result} = [(V_S - V_B) \times N_A \times F \times 100] / W$$

V_S = *Titrant* volume consumed by the *Sample* (mL)

V_B = *Titrant* volume consumed by the *Blank* (mL)

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

F = equivalency factor, 93.56 mg/mEq

W = *Sample* weight (mg)

Acceptance criteria: 99.0%–100.5%

IMPURITIES

- **[CHLORIDE AND SULFATE \(221\)](#), [Chloride](#):** A 280-mg portion shows no more chloride than corresponds to 1.0 mL of 0.020 N [hydrochloric acid](#) (0.25%).

Change to read:

- **[LEAD \(251\)](#), [Procedures, Procedure 1](#)** (CN 1-JUN-2023) : NMT 10 µg/g

SPECIFIC TESTS

CLARITY AND COLOR OF SOLUTION

Sample solution: 1.0 g in 10 mL of water

Standard solution: To 0.2 mL of a solution of [sodium chloride](#) containing 10 µg/mL of chloride ion (Cl), add 20 mL of water and mix. Then add 1 mL of 5 N [nitric acid](#), 0.2 mL of [dextrin](#) solution (1 in 50), and 1 mL of [silver nitrate TS](#), and allow to stand for 15 min.

Analysis: Compare the *Sample solution* with the *Standard solution* (see [Visual Comparison \(630\)](#)).

Acceptance criteria: The *Sample solution* is colorless and has no more turbidity than the *Standard solution*.

- [OPTICAL ROTATION \(781S\), Procedures, Specific Rotation](#)

Sample solution: 100 mg/mL in 2 N [hydrochloric acid](#)

Acceptance criteria: +24.8° to +25.3°, determined at 20°

- [pH \(791\)](#): 6.7–7.2, in a solution (1 in 20)

- [LOSS ON DRYING \(731\)](#)

Analysis: Dry at 100° for 5 h.

Acceptance criteria: NMT 0.5%

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight containers.

- [USP REFERENCE STANDARDS \(11\)](#)
[USP Monosodium Glutamate RS](#)

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
MONOSODIUM GLUTAMATE	Documentary Standards Support	SE2020 Simple Excipients
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SE2020 Simple Excipients

Chromatographic Database Information: [Chromatographic Database](#)

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