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Glutaral Disinfectant Solution

DEFINITION

Glutaral Disinfectant Solution contains NLT 100.0% and NMT 110.0%, by weight, of the labeled amount of glutaraldehyde ($C_5H_8O_2$).

IDENTIFICATION

• **A. Melting Range or Temperature ⟨741⟩**

2,4-Dinitrophenylhydrazine reagent: To 0.8 g of 2,4-dinitrophenylhydrazine add 4 mL of sulfuric acid, then add 6 mL of water, dropwise, with swirling. When dissolution is essentially complete, add 20 mL of alcohol, and filter. Use the filtrate.

Sample: 5 mL

Analysis: To 20 mL of *2,4-Dinitrophenylhydrazine reagent* add the *Sample*, mix by swirling, and allow to stand for 5 min. Collect the precipitate on a filter, and rinse thoroughly with alcohol. Dissolve the precipitate in 20 mL of hot ethylene dichloride, filter, and cool the filtrate in an ice bath until crystallization occurs. Collect the precipitate on a filter. Redissolve the precipitate by refluxing with 30 mL of acetone, filter, and cool the filtrate in an ice bath until crystallization occurs. Collect the precipitate on a filter.

Acceptance criteria: The 2,4-dinitrophenylhydrazone so obtained melts between 185° and 195°, within a 3° range.

ASSAY

• **Procedure**

Buffer: Dissolve 2.59 g of monobasic potassium phosphate and 6.77 g of anhydrous dibasic sodium phosphate in 500 mL of water in a 1000-mL volumetric flask. Dilute to volume.

Hydroxylamine hydrochloride solution: 70 µg/mL of hydroxylamine hydrochloride in *Buffer*

Standard solution: 50 µg/mL of glutaraldehyde in water from Glutaral Concentrate

Standard blank solution: Add 10.0 mL of *Standard solution* and 10.0 mL of *Buffer* to a 50-mL volumetric flask, and dilute with water to volume.

Sample solution: 50 µg/mL of glutaraldehyde in water from Disinfectant Solution

Sample blank solution: Add 10.0 mL of *Sample solution* and 10.0 mL of *Buffer* to a 50-mL volumetric flask, and dilute with water to volume.

Reagent blank solution: Add 10.0 mL of *Buffer* and 10.0 mL of *Hydroxylamine hydrochloride solution* to a 50-mL volumetric flask, and dilute with water to volume.

Instrumental conditions

Mode: UV

Analytical wavelength: 238 nm

Blank: *Reagent blank solution*

Analysis

Samples: *Standard solution*, *Standard blank solution*, *Sample solution*, and *Sample blank solution*

Transfer 10.0 mL each of the *Standard solution* and the *Sample solution* to separate 50-mL volumetric flasks. To each flask add 10.0 mL of *Hydroxylamine hydrochloride solution*, dilute with water to volume, mix, and allow each flask to stand for 25 min.

Concomitantly determine the absorbances of the *Standard solution*, *Sample solution*, *Standard blank solution*, and *Sample blank solution*.

Calculate the percentage of the labeled amount of glutaraldehyde ($C_5H_8O_2$) in the portion of Disinfectant Solution taken:

$$\text{Result} = [(A_U - A_{Ub})/(A_S - A_{Sb})] \times (C_S/C_U) \times 100$$

A_U = absorbance of the *Sample solution*

A_{Ub} = absorbance of the *Sample blank solution*

A_S = absorbance of the *Standard solution*

A_{Sb} = absorbance of the *Standard blank solution*

C_S = concentration of glutaraldehyde in the *Standard solution* (µg/mL)

C_U = concentration of the *Sample solution* (µg/mL)

Acceptance criteria: 100.0%–110.0%

SPECIFIC TESTS

• **pH** ⟨791⟩**:** 2.7–3.7

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in tight, light-resistant containers, and avoid exposure to excessive heat.

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

Topic/Question	Contact	Expert Committee
GLUTARAL DISINFECTANT SOLUTION	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
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