

tween 156°C and 159°C. With this precipitate, proceed as directed in the Identification under Amobarbital.

(2) Ignite 0.5 g of Amobarbital Sodium for Injection, cool, and dissolve the residue in 10 mL of water: the solution responds to the Qualitative Tests (1) for sodium salt.

Purity (1) Clarity and color of solution—Dissolve 1.0 g of Amobarbital Sodium for Injection in 10 mL of freshly boiled and cooled water: the solution is clear and colorless.

(2) Chloride—Dissolve 1.0 g of Amobarbital Sodium for Injection in 49 mL of water, add 1 mL of acetic acid (100), shake, and filter. Discard the first 10 mL of the filtrate, and to the subsequent 30 mL of the filtrate add 6 mL of dilute nitric acid and water to make 50 mL. Perform the test using this solution as the test solution. Prepare the control solution as follows: to 0.30 mL of 0.01 mol/L hydrochloric acid VS add 0.5 mL of acetic acid (100), 6 mL of dilute nitric acid and water to make 50 mL (not more than 0.018%).

(3) Sulfate—Dissolve 2.0 g of Amobarbital Sodium for Injection in 49 mL of water, add 1 mL of acetic acid (100), shake, and filter. Discard the first 10 mL of the filtrate, and to the subsequent 25 mL of the filtrate add 2.5 mL of dilute hydrochloric acid and water to make 50 mL. Perform the test using this solution as the test solution. Prepare the control solution as follows: to 0.40 mL of 0.005 mol/L sulfuric acid VS add 0.5 mL of acetic acid (100), 1 mL of dilute hydrochloric acid and water to make 50 mL (not more than 0.019%).

(4) Heavy metals—Dissolve 2.0 g of Amobarbital Sodium for Injection in 45 mL of water, add 5 mL of dilute hydrochloric acid, shake vigorously, and warm on a water bath for 2 minutes with occasional shaking. Cool, add 30 mL of water, shake, and filter. Discard the first 10 mL of the filtrate, add 1 drop of phenolphthalein TS to the subsequent 40 mL of the filtrate, add ammonia TS until a slight red color develops, and add 2.5 mL of dilute hydrochloric acid and water to make 50 mL. Perform the test using this solution as the test solution. Prepare the control solution as follows: to 2.5 mL of dilute hydrochloric acid add 1 drop of phenolphthalein TS, add ammonia TS until a pale red color develops, and add 2.5 mL of dilute acetic acid, 2.0 mL of Standard Lead Solution and water to make 50 mL (not more than 20 ppm).

(5) Neutral or basic substances—Dissolve about 1 g of Amobarbital Sodium for Injection, accurately weighed, in 10 mL of water and 5 mL of sodium hydroxide TS, then add 40 mL of chloroform, and shake well. Separate the chloroform layer, wash with two 5-mL portions of water, and filter. Evaporate the filtrate on a water bath to dryness, and dry the residue at 105°C for 1 hour: the mass of the residue is not more than 0.30%.

(6) Readily carbonizable substances—Perform the test with 0.5 g of Amobarbital Sodium for Injection: the solution has no more color than Matching Fluid A.

Loss on drying Not more than 1.0% (1 g, 105°C, 4 hours).

Assay Weigh accurately the contents of not less than 10 samples of Amobarbital Sodium for Injection. Weigh accurately about 0.5 g of the contents, previously dried, transfer to a separator, dissolve in 20 mL of water, add 5 mL of ethanol (95) and 10 mL of dilute hydrochloric acid, and extract with 50 mL of chloroform, then with three 25-mL portions of chloroform. Combine the chloroform extracts,

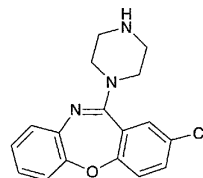
wash with two 5-mL portions of water, and extract the washings with two 10-mL portions of chloroform. Filter the combined chloroform extracts into a conical flask, and wash the filter paper with three 5-mL portions of chloroform. Combine the filtrate and the washings, and add 10 mL of ethanol (95). Titrate with 0.1 mol/L potassium hydroxide-ethanol VS until the color of the solution changes from yellow through light blue to purple (indicator: 2 mL of alizarin yellow GG-thymolphthalein TS). Perform a blank determination with a mixture of 160 mL of chloroform and 30 mL of ethanol (95), and make any necessary correction.

Each mL of 0.1 mol/L potassium hydroxide-ethanol VS = 24.826 mg of $C_{11}H_{17}N_2NaO_3$

Containers and storage Containers—Hermetic containers.

Amoxapine

アモキサピン



$C_{17}H_{16}ClN_3O$: 313.78

2-Chloro-11-(piperazin-1-yl)dibenz[*b,f*][1,4]oxazepine
[14028-44-5]

Amoxapine, when dried, contains not less than 98.5% of $C_{17}H_{16}ClN_3O$.

Description Amoxapine occurs as white to light yellowish white crystals or crystalline powder.

It is freely soluble in acetic acid (100), slightly soluble in ethanol (95) and in diethyl ether, and practically insoluble in water.

Identification (1) Determine the absorption spectrum of a solution of Amoxapine in 0.1 mol/L hydrochloric acid TS (1 in 50,000) as directed under the Ultraviolet-visible Spectrophotometry, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption as the same wavelengths.

(2) Determine the infrared absorption spectrum of Amoxapine, previously dried, as directed in the potassium bromide disk method under the Infrared Spectrophotometry, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wave numbers.

(3) Perform the test with Amoxapine as directed under the Flame Coloration Test (2): a green color appears.

Melting point 178 – 182°C

Purity (1) Heavy metals—Proceed with 2.0 g of Amoxapine according to Method 2, and perform the test. Prepare the control solution with 3.0 mL of Standard Lead Solution (not more than 15 ppm).

(2) Related substances—Dissolve 0.5 g of Amoxapine in

10 mL of a mixture of ethanol (95) and acetic acid (100) (9:1), and use this solution as the sample solution. Pipet 1 mL of the sample solution, and add a mixture of ethanol (95) and acetic acid (100) (9:1) to make exactly 10 mL. Pipet 1 mL of this solution, add a mixture of ethanol (95) and acetic acid (100) (9:1) to make exactly 20 mL, and use this solution as the standard solution. Perform the test with these solutions as directed under the Thin-layer Chromatography. Spot 5 μ L each of the sample solution and the standard solution on a plate of silica gel with fluorescent indicator for thin-layer chromatography. Develop the plate with a mixture of ethanol (95) and acetic acid (100) (9:1) to a distance of about 10 cm, and air-dry the plate. Examine under ultraviolet light (main wavelength: 254 nm): the spots other than the principal spot from the sample solution are not more intense than the spot from the standard solution.

Loss on drying Not more than 0.4% (1 g, in vacuum, 60°C, 3 hours).

Residue on ignition Not more than 0.10% (1 g).

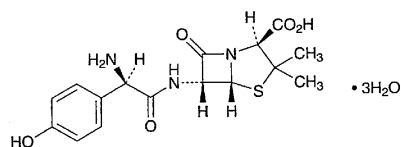
Assay Weigh accurately about 0.3 g of Amoxicillin, previously dried, dissolve in 50 mL of acetic acid (100), and titrate with 0.1 mol/L perchloric acid VS until the color of the solution changes from purple through blue to greenish blue (indicator: 2 drops of crystal violet TS). Perform a blank determination, and make any necessary correction.

$$\begin{aligned} \text{Each mL of 0.1 mol/L perchloric acid VS} \\ = 15.689 \text{ mg of } C_{17}H_{16}ClN_3O \end{aligned}$$

Containers and storage Containers—Tight containers.

Amoxicillin

アモキシシリン



$C_{16}H_{19}N_3O_5S \cdot 3H_2O$: 419.45
(2*S*,5*R*,6*R*)-6-[(2*R*)-2-Amino-2-(4-hydroxyphenyl)-acetylamino]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo-[3.2.0]heptane-2-carboxylic acid trihydrate [61336-70-7]

Amoxicillin contains not less than 750 μ g (potency) per mg, calculated on the anhydrous basis. The potency of Amoxicillin is expressed as mass (potency) of amoxicillin ($C_{16}H_{19}N_3O_5S$: 365.40).

Description Amoxicillin occurs as white to light yellowish white, crystals or crystalline powder.

It is slightly soluble in water and in methanol, and very slightly soluble in ethanol (95).

Identification Determine the infrared absorption spectrum of Amoxicillin as directed in the potassium bromide disk method under the Infrared Spectrophotometry, and compare the spectrum with the Reference Spectrum or the spectrum of Amoxicillin Reference Standard: both spectra ex-

hibit similar intensities of absorption at the same wave numbers.

Purity (1) Heavy metals—To 1.0 g of Amoxicillin add 2 mL of a solution of magnesium sulfate heptahydrate (1 in 4), mix, and heat on a water bath to dryness. Carbonize the residue by gently heating. After cooling, add 1 mL of sulfuric acid, heat carefully, then heat at 500–600°C to incinerate. After cooling, add 1 mL of hydrochloric acid to the residue, and heat on a water bath to dryness. Then add 10 mL of water to the residue, and heat on a water bath to dissolve. After cooling, add ammonia TS to adjust the pH to 3–4, and add 2 mL of dilute acetic acid. If necessary, filter, wash the residue on the filter with 10 mL of water, transfer the filtrate and washings into a Nessler tube, add water to make 50 mL, and use this solution as the test solution. Prepare the control solution as follows: To 2.0 mL of Standard Lead Solution add 2 mL of a solution of magnesium sulfate heptahydrate (1 in 4), then proceed in the same manner as for preparation of the test solution (not more than 20 ppm).

(2) Arsenic—Prepare the test solution with 1.0 g of Amoxicillin according to Method 4, and perform the test using Apparatus B (not more than 2 ppm).

Water Not less than 11.0% and not more than 15.0% (0.1 g, volumetric titration, direct titration).

Assay Weigh accurately an amount of Amoxicillin and Amoxicillin Reference Standard, equivalent to about 0.1 g (potency), dissolve each in a solution of sodium tetraborate decahydrate (1 in 200) to make exactly 50 mL, and use these solutions as the sample solution and the standard solution. Perform the test with 10 μ L each of the sample solution and the standard solution as directed under the Liquid Chromatography according to the following conditions, and calculate the peak areas, A_T and A_S , of amoxicillin of each solution.

$$\begin{aligned} \text{Amount } [\mu\text{g (potency)}] \text{ of } C_{16}H_{19}N_3O_5S \\ = \text{amount [mg (potency)] of Amoxicillin Reference} \\ \text{Standard} \times \frac{A_T}{A_S} \times 1000 \end{aligned}$$

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 254 nm).

Column: A stainless steel column 4 mm in inside diameter and 30 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (10 μ m in particle diameter).

Column temperature: A constant temperature of about 25°C.

Mobile phase: Dissolve 1.361 g of sodium acetate trihydrate in 750 mL of water, adjust the pH to 4.5 with acetic acid (31), and add water to make 1000 mL. To 950 mL of this solution add 50 mL of methanol.

Flow rate: Adjust the flow rate so that the retention time of amoxicillin is about 8 minutes.

System suitability—

System performance: When the procedure is run with 10 μ L of the standard solution under the above operating conditions, the number of theoretical steps of the peak of amoxicillin is not less than 2500 steps.

System repeatability: When the test is repeated 6 times with 10 μ L of the standard solution under the above operating conditions, the relative standard deviation of the peak areas of amoxicillin is not more than 1.0%.