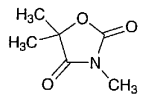
Trimethadione

トリメタジオン



$C_6H_9NO_3$: 143.14
3,5,5-Trimethyloxazolidine-2,4-dione [*127-48-0*]

Trimethadione, when dried, contains not less than 98.0% of $C_6H_9NO_3$.

Description Trimethadione occurs as white crystals or crystalline powder. It has a camphor-like odor.

It is very soluble in ethanol (95) and in chloroform, freely soluble in diethyl ether, and soluble in water.

Identification (1) To 5 mL of a solution of Trimethadione (1 in 50) add 2 mL of barium hydroxide TS: a precipitate is formed immediately.

(2) Determine the infrared absorption spectrum of a solution of Trimethadione in chloroform (1 in 50) as directed in the solution method under the Infrared Spectrophotometry, using a 0.1-mm fixed sodium chloride cell, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wave numbers.

Meting point 45 – 47°C

Purity Heavy metals—Proceed with 2.0 g of Trimethadione according to Method 1, and perform the test. Prepare the control solution with 2.0 mL of Standard Lead Solution (not more than 10 ppm).

Loss on drying Not more than 0.5% (1 g, silica gel, 6 hours).

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

Assay Weigh accurately about 0.4 g of Trimethadione, previously dried, in a glass-stoppered conical flask, dissolve in 5 mL of ethanol (95), add exactly measured 50 mL of 0.1 mol/L sodium hydroxide VS, stopper, and allow to stand for 15 minutes with occasional shaking. Titrate the excess sodium hydroxide with 0.1 mol/L hydrochloric acid VS (indicator: 4 drops of cresol red TS). Perform a blank determination.

Each mL of 0.1 mol/L sodium hydroxide VS
= 14.314 mg of $C_6H_9NO_3$

Containers and storage Containers—Tight containers.
Storage—Not exceeding 30°C.

Trimethadione Tablets

トリメタジオン錠

Trimethadione Tabelts contain not less than 94% and not more than 106% of the labeled amount of trimethadione ($C_6H_9NO_3$: 143.14).

Method of preparation Prepare as directed under Tablets, with Trimethadione.

Identification (1) Weigh a portion of powdered Trimethadione Tablets, equivalent to 1 g of Trimethadione according to the labeled amount, add 10 mL of petroleum benzin, and shake frequently for 15 minutes. Decant, remove the petroleum benzin, add another 10 mL of petroleum benzin, and repeat the extraction in the same manner. To the residue add 25 mL of diethyl ether, allow to stand for 20 minutes with occasional shaking, filter, evaporate the filtrate at room temperature, and dry the residue in a desiccator (silica gel) for 6 hours: the residue melts between 44°C and 47°C. Proceed with this residue as directed in the Identification (1) under Trimethadione.

(2) Determine the infrared absorption spectrum of a solution of the residue obtained in (1) in chloroform (1 in 50) in a 0.1-mm fixed sodium chloride cell, as directed in the solution method under the Infrared Spectrophotometry: it exhibits absorption at the wave numbers of about 2960 cm^{-1}, 1814 cm^{-1}, 1735 cm^{-1}, 1445 cm^{-1}, 1394 cm^{-1}, 1290 cm^{-1}, 1100 cm^{-1} and 1055 cm^{-1}.

Assay Weigh accurately and powder not less than 20 Trimethadione Tablets. Weigh accurately a portion of the powder, equivalent to about 1 g of trimethadione ($C_6H_9NO_3$), add 50 mL of ethanol (95), and boil gently for 15 minutes under a reflux condenser. Filter the warm ethanol (95) solution into a 100-mL volumetric flask through a glass filter (G4), and wash the residue with three 10-mL portions of warm ethanol (95). Combine the washings with the filtrate in the flask, cool, and add ethanol (95) to make exactly 100 mL. Pipet 25 mL of the solution into a glass-stoppered conical flask, add 25 mL of water and exactly 30 mL of 0.1 mol/L sodium hydroxide VS, stopper, allow to stand for 15 minutes with occasional shaking, and titrate the excess sodium hydroxide with 0.1 mol/L hydrochloric acid VS (indicator: 4 drops of cresol red TS). Perform a blank determination.

Each mL of 0.1 mol/L sodium hydroxide VS
= 14.314 mg of $C_6H_9NO_3$

Containers and storage Containers—Tight containers.
Storage—Not exceeding 30°C.

Trimetoquinol Hydrochloride

Tretoquinol Hydrochloride

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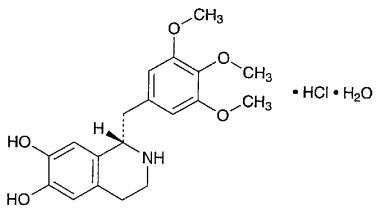


$C_{19}H_{23}NO_5.HCl.H_2O$: 399.87
(1*S*)-1,2,3,4-Tetrahydro-1-(3,4,5-trimethoxybenzyl)-isoquinoline-6,7-diol monohydrochloride monohydrate

[*18559-59-6*, anhydride]

Trimetoquinol Hydrochloride contains not less than 98.0% of $C_{19}H_{23}NO_5$.HCl (mol. wt.: 381.86), calculated on the dried basis.

Description Trimetoquinol Hydrochloride occurs as white crystals or crystalline powder. It is odorless.

It is sparingly soluble in water and in ethanol (99.5), slightly soluble in acetonitorile and in acetic acid (100), and practically insoluble in acetone, in dehydrated diethyl ether and in chloroform.

Melting point: about 151°C (with decomposition, after drying).

Identification **(1)** Dissolve 0.01 g of Trimethoquinol Hydrochloride in 5 mL of water, add 1 mL of dilute iron (III) chloride TS: a deep green color develops. Add 4 drops of diluted ammonia TS (1 in 10): a red-purple color is produced.

(2) Dissolve 0.03 g of Trimetoquinol Hydrochloride in 5 mL of water, and add 3 drops of Reinecke salt TS: a light red precipitate is formed.

(3) Dissolve 0.01 g of Trimetoquinol Hydrochloride in 200 mL of 0.01 mol/L hydrochloric acid TS. Determine the absorption spectrum of the solution as directed under the Ultraviolet-visible Spectrophotometry, and compare the spectrum with the Reference Spectrum: both spectra exhibit similar intensities of absorption at the same wavelengths.

(4) Determine the infrared absorption spectrum of Trimetoquinol Hydrochloride as directed in the potassium chloride 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.

(5) A solution of Trimetoquinol Hydrochloride (1 in 50) responds to the Qualitative Tests (1) for chloride.

Optical rotation $[\alpha]_D^{20}$: -17 – $-20°$ (0.25 g, calculated on the dried basis, water, after warming and cooling, 25 mL, 100 mm).

pH Dissolve 1.0 g of Trimetoquinol Hydrochloride in 100 mL of water by warming, and cool: the pH of this solution is between 4.5 and 5.5.

Purity **(1)** Clarity and color of solution—Dissolve 0.10 g of Trimetoquinol Hydrochloride in 10 mL of water by warming: the solution is clear and colorless.

(2) Sulfate—Perform the test with 0.5 g of Trimetoquinol Hydrochloride. Prepare the control solution with 0.40 mL of 0.005 mol/L sulfuric acid VS (not more than 0.038%).

(3) Heavy metals—Proceed with 1.0 g of Trimetoquinol Hydrochloride according to Method 2, and perform the test. Prepare the control solution with 2.0 mL of Standard Lead Solution (not more than 20 ppm).

(4) Arsenic—Prepare the test solution with 1.0 g of Trimetoquinol Hydrochloride according to Method 3, and perform the test using Apparatus B (not more than 2 ppm).

(5) Related substances—Dissolve 0.050 g of Trimetoquinol Hydrochloride in 50 mL of the mobile phase, and use this solution as the sample solution. Pipet 1 mL of this solution, add the mobile phase to make exactly 100 mL, and use this solution as the standard solution. Perform the test with 20 μL each of the sample solution and the standard solution, as directed under the Liquid Chromatography according to the following conditions. Determine each peak area of both solutions by the automatic integration method: the total area of the peaks other than that of trimetoquinol from the sample solution is not larger than the peak area of trimetoquinol from the standard solution.

Operating conditions—

Detector: An ultraviolet absorption photometer (wavelength: 283 nm).

Column: A stainless steel column about 4 mm in inside diameter and 15 to 30 cm in length, packed with octadecylsilanized silica gel for liquid chromatography (5 to 10 μm in particle diameter).

Column temperature: A constant temperature of about 40°C.

Mobile phase: Dissolve 2 g of potassium dihydrogenphosphate and 2 g of sodium 1-pentane sulfonate in 1000 mL of water. Adjust with phosphoric acid to a pH between 2.8 and 3.2, and filter through a membrane filter (0.4 μm). Add 200 mL of acetonitrile to 800 mL of the filtrate.

Flow rate: Adjust the flow rate so that the retention time of trimetoquinol is about 7 minutes.

Selection of column: Dissolve 5 mg of Trimetoquinol Hydrochloride and 1 mg of procaine hydrochloride in 50 mL of the mobile phase. Proceed with 20 μL of this solution under the above operating conditions, and calculate the resolution. Use a column giving elution of procaine and trimetoquinol in this order with the resolution between these peaks being not less than 4.

Detection sensitivity: Adjust the detection sensitivity so that the peak height of trimetoquinol from 20 μL of the standard solution is between 2 mm and 6 mm.

Time span of measurement: About twice as long as the retention time of trimetoquinol after the solvent peak.

Loss on drying 3.5 – 5.5% (1 g, in vacuum, 105°C, 4 hours).

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

Assay Weigh accurately about 0.5 g of Trimetoquinol Hydrochloride, dissolve in 2 mL of 0.1 mol/L hydrochloric acid VS and 70 mL of ethanol (99.5) with thorough shaking, and titrate with 0.1 mol/L potassium hydroxide-ethanol VS (potentiometric titration). Calculate the consumed volume of 0.1 mol/L potassium hydroxide-ethanol VS between the first inflection point and of the second inflection point.

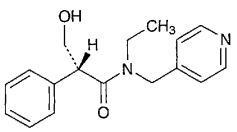
Each mL of 0.1 mol/L potassium hydroxide-ethanol VS
= 38.186 mg of $C_{19}H_{23}NO_5$.HCl

Containers and storage Containers—Well-closed containers.

Storage—Light-resistant.

Tropicamide

トロピカミド



and enantiomer