(2) Cinnamyl cocaine—Dissolve 0.10 g of Cocaine Hydrochloride in 5 mL of water, and add 0.3 mL of diluted sulfuric acid (1 in 20) and 0.10 mL of 0.02 mol/L potassium permanganate VS: the red color does not disappear within 30 minutes.

(3) Isoatropyl cocaine—Dissolve 0.10 g of Cocaine Hydrochloride in 30 mL of water in a beaker. Transfer 5 mL of this solution to a test tube, add 1 drop of ammonia TS, and mix. After the precipitate is coagulated, add 10 mL of water, and transfer the mixture to the former beaker, to which 30 mL of water has been added previously. Wash the test tube with 10 mL of water, combine the washings with the mixture in the beaker, add 3 drops of ammonia TS to the combined mixture, and mix gently: a crystalline precipitate is produced. Allow to stand for 1 hour: the supernatant liquid is clear. Loss on drying Not more than 1.0% (1 g, 105°C, 4 hours). Residue on ignition Not more than 0.1% (0.5 g).

Assay Weigh accurately about 0.5 g of Cocaine Hydrochloride, previously dried, dissolve in 50 mL of a mixture of acetic anhydride and acetic acid (100) (7:3), and titrate with 0.1 mol/L perchloric acid VS (potentiometric titration). Perform a blank determination, and make any necessary correction.

Each mL of 0.1 mol/L perchloric acid VS
= 33.982 mg of $C_{17}H_{21}NO_4.HCl$

Containers and storage Containers—Tight containers.
Storage—Light-resistant.

Codeine Phosphate

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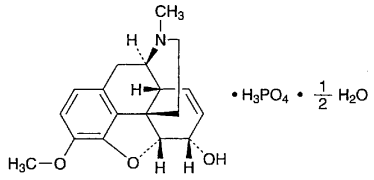

$C_{18}H_{21}NO_3.H_3PO_4.1/2H_2O$: 406.37
(5*R*,6*S*)-7,8-Didehydro-4,5-epoxy-3-methoxy-17-methylmorphinan-6-ol monophosphate hemihydrate
[*41444-62-6*]

Codeine Phosphate contains not less than 98.0% of codeine phosphate ($C_{18}H_{21}NO_3.H_3PO_4$: 397.36), calculated on the anhydrous basis.

Description Codeine Phosphate occurs as white to yellowish white crystals or crystalline powder.

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

The pH of a solution of Codeine Phosphate (1 in 10) is between 3.0 and 5.0.

It is affected by light.

Identification **(1)** Determine the absorption spectrum of a solution of Codeine Phosphate (1 in 10,000) 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.

(2) Determine the infrared absorption spectrum of Codeine Phosphate, previously dried at 105°C for 4 hours, 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) A solution of Codeine Phosphate (1 in 20) responds to the Qualitative Tests (1) for phosphate.

Optical rotation $[\alpha]_D^{20}$: −98 – −102° (0.4 g calculated on the anhydrous basis, water, 20 mL, 100 mm).

Purity **(1)** Chloride—Perform the test with 0.5 g of Codeine Phosphate. Prepare the control solution with 0.30 mL of 0.01 mol/L hydrochloric acid VS (not more than 0.021%).

(2) Sulfate—Perform the test with 0.20 g of Codeine Phosphate. Prepare the control solution with 1.0 mL of 0.005 mol/L sulfuric acid VS (not more than 0.240%).

(3) Related substances—Dissolve 0.20 g of Codeine Phosphate in 10 mL of a mixture of 0.01 mol/L hydrochloric acid TS and ethanol (99.5) (4:1), and use this solution as the sample solution. Pipet 1 mL of the sample solution, add a mixture of 0.01 mol/L hydrochloric acid TS and ethanol (99.5) (4:1) to make exactly 100 mL, and use this solution as the standard solution. Perform the test with these solutions as directed under the Thin-layer Chromatography. Spot 10 μL 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 (99.5), toluene, acetone and ammonia solution (28) (14:14:7:1) 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.

Water 1.5 – 3.0% (0.5 g, direct titration).

Assay Dissolve about 0.5 g of Codeine Phosphate, accurately weighed, in 70 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: 3 drops of crystal violet TS). Perform a blank determination, and make any necessary correction.

Each mL of 0.1 mol/L perchloric acid VS
= 39.736 mg of $C_{18}H_{21}NO_3.H_3PO_4$

Containers and storage Containers—Tight containers.
Storage—Light-resistant.

1% Codeine Phosphate Powder

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10% Codeine Phosphate Powder contains not less than 0.90% and not more than 1.10% of codeine phosphate ($C_{18}H_{21}NO_3.H_3PO_4.½H_2O$: 406.37).