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Bile Salts

—A concentrate of beef bile, the principal constituent of which is sodium desoxycholate, determined as cholic acid. Soluble in water and in alcohol; the solutions foam strongly when shaken.

Insoluble Substances: Dissolve 5 g in 100 mL of dilute alcohol (84 in 100), warming if necessary to aid solution. Filter within 15 minutes through a tared filter, and wash with small portions of the dilute alcohol until the last washing is colorless or practically so, then dry the residue at 105° for 1 hour, and weigh: the weight of the residue does not exceed 0.1%.

Assay

Standard cholic acid solution: Dissolve 50.0 mg of cholic acid, accurately weighed, in dilute acetic acid (6 in 10) to make 100 mL, and mix. Store in a refrigerator.

Procedure: Dissolve 1.0 g, accurately weighed, in 50 mL of dilute acetic acid (6 in 10). Filter the solution, if necessary, into a 100-mL volumetric flask, wash the original container and the filter with small portions of dilute acetic acid (6 in 10), add the same acetic acid to volume, and mix. Dilute 10 mL of this solution, accurately measured, with dilute acetic acid (6 in 10) to make 100 mL, and mix.

Pipet 1 mL each of the *Standard cholic acid solution* and the solution of the Bile Salts into two matched test tubes. To each tube add 1 mL, accurately measured, of freshly prepared furfural solution (1 in 100), immediately place the tubes in an ice-bath for 5 minutes, then add to each tube 13 mL, accurately measured, of dilute sulfuric acid, made by cautiously mixing 50 mL of sulfuric acid with 65 mL of water. Mix the contents of the tubes, and place them in a water bath maintained at a temperature of 70° for 10 minutes. Immediately transfer the tubes to an ice-bath for 2 minutes, then determine the absorbance of each solution at the wavelength of maximum absorbance at about 670 nm, with a suitable spectrophotometer. Calculate the quantity, in mg, of cholic acid (C₂₄H₄₀O₅) in the weight of the Bile Salts taken by the formula:

$$500(A_u/A_s)$$

in which A_u and A_s are the absorbances of the solutions from the Bile Salts and the *Standard cholic acid solution*, respectively. Not less than 45% of cholic acid is found.

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

Topic/Question	Contact	Expert Committee
BILE SALTS	Margareth R.C. Marques Principal Scientific Liaison	HDQ Headquarters

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