Ethamsylate

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Manufacturers, regulatory authorities, health authorities, researchers, and other stakeholders are invited to provide their feedback and comments on this draft proposal. Manufacturers are also invited to submit samples of their products to the IPC to ensure that the proposed monograph adequately controls the quality of the product(s) they manufacture. Comments and samples received after the last date will not be considered by the IPC before finalizing the monograph.

Please send any comments you may have on this draft document to lab.ipc@gov.in, with a copy to Dr. Gaurav Pratap Singh (email: gpsingh.ipc@gov.in) before the last date for comments.

Document History and Schedule for the Adoption Process

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Further follow-up action as required.	

Ethamsylate

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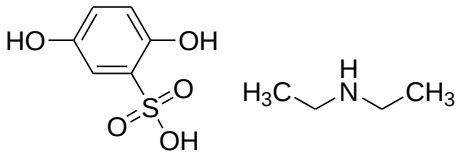

$C_{10}H_{17}NO_5S$ Mol. Wt. 263.3

N-Ethylethanamine 2,5-dihydroxybenzenesulfonate.

Ethamsylate contains not less than 99.0 per cent and not more than 101.0 per cent of the stated amount of $C_{10}H_{17}NO_5S$, calculated on the dried basis.

Category. Antifibrinolytic.

Description. A white or almost white, crystalline powder.

Identification

Test A may be omitted if tests B, C and D are carried out. Test B, C and D may be omitted if Test A is carried out.

A**.** Determine by infrared absorption spectrophotometry (2.4.6). Compare the spectrum with that obtained with *ethamsylate IPRS* or with the reference spectrum of ethamsylate.

B. Melting point (2.4.21). 127° to 134°.

C. When examined in the range 210 nm to 350 nm (2.4.7), a 0.0025 per cent w/v solution in *water* shows an absorption maximum at about 221nm and 301nm; specific absorbance at 301 nm, 145 to 151.

D. Dissolve 0.5 g of *sodium hydroxide* in 2 ml of freshly prepared solution A in a test tube. Warm the mixture and place a wet strip of *red litmus paper* near the open end of the test tube which turns blue.

Tests

Appearance of solution. A 10.0 per cent w/v solution in carbon dioxide-free water (solution A) is clear and colorless (2.4.1.).

pH (2.4.24). 4.5 to 5.6, for solution A.

Related substances. Determine by liquid chromatography (2.4.14).

NOTE- Keep all the solutions at 2° to 8°.

Test solution. Dissolve 100.0 mg of the substance under examination in *water* and dilute to 10.0 ml with *water*.

Reference solution (a). A 0.001 per cent w/v solution of *ethamsylate IPRS* in *water*.

Reference solution (b). A solution containing 0.001 per cent w/v, each of, *ethamsylate IPRS* and *hydroquinone IPRS* (Impurity A) in *water*.

Chromatographic system
- a stainless steel column 25 cm x 4.6 mm, packed with octadecylsilane bonded to porous silica (5 µm),
- mobile phase. a mixture of 90 volumes of a buffer solution prepared by dissolving 1.2 g of *sodium dihydrogen phosphate* in 1000 ml of *water*, adjusted to pH 6.5 with *disodium hydrogen phosphate solution* and 10 volumes of *acetonitrile*,
- flow rate: 0.8 ml per minute,
- spectrophotometer set at 220 nm,
- injection volume: 10 µl,
-

Name	Relative Retention time	Correction factor
Ethamsylate (Retention time: about 6 minutes)	1.0	-
Ethamsylate Impurity A[1]	1.7	0.5

1benzene-1, 4-diol (hydroquinone),

Inject reference solution (b). The test is not valid unless the resolution between the peak due to ethamsylate and ethamsylate impurity A is not less than 8.0.

Inject reference solution (a) and the test solution. In the chromatogram obtained with the test solution, the area of the peak corresponding to ethamsylate impurity A is not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (0.1 per cent). The area of any other secondary peak is not more than the area of the principal peak in the chromatogram obtained with reference solution (a) (0.1 per cent) and the sum of the areas of all the secondary peaks is not more than twice the area of the principal peak in the chromatogram obtained with reference solution (a) (0.2 per cent). Ignore any peak with an area less than 0.5 times the area of the principal peak in the chromatogram obtained with the reference solution (a) (0.05 per cent).

Iron (2.3.14). 20.0 ml of Solution A complies with the limit test for iron using 1.0 ml of 20 ppm Iron standard solution (10 ppm).~~(10 ppm).~~

Sulphated ash (2.3.18). Not more than 0.1 per cent. ~~1.0 g~~

Loss on drying (2.4.19). Not more than 0.5 per cent, determined on 1.0 g by drying in vacuum in an oven at 60°.

Assay. Dissolve 200 mg in a mixture of 10 ml of *water* and 40 ml of *dilute sulphuric acid*. Titrate with 0.1 M *cerium sulphate*, determining the end-point potentiometrically (2.4.25). Carry out a blank titration.

1 ml of 0.1 M *cerium sulphate* is equivalent to 0.01316 g of $C_{10}H_{17}NO_5S$.

Storage. Store protected from light and moisture.

Solubility. Very soluble in *water*, freely soluble in *methanol*, soluble in *ethanol*, practically insoluble in *methylene chloride*.