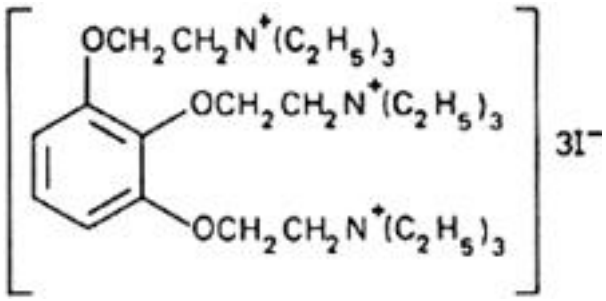
Gallamine triethiodide (Gallamini triethiodidum)

Molecular formula. $C_{30}H_{60}I_3N_3O_3$

Relative molecular mass. 891.5

Graphic formula.



Chemical name. [*v*-Phenenyltris(oxyethylene)]tris[triethylammonium] triiodide; 2,2',2"-[1,2,3-benzenetriyltris(oxy)]tris[*N,N,N*-triethylethanaminium triiodide; 1,2,3-tris(2-diethylaminoethoxy)benzene triethiodide; CAS Reg. No. 65-29-2.

Description. A white or almost white powder; odourless.

Solubility. Very soluble in water; sparingly soluble in ethanol (~750 g/l) TS; practically insoluble in ether R.

Category. Muscle relaxant.

Storage. Gallamine triethiodide should be kept in a tightly closed container, protected from light.

Additional information. Gallamine triethiodide is hygroscopic.

Requirements

Definition. Gallamine triethiodide contains not less than 98.0% and not more than 101.0% of $C_{30}H_{60}I_3N_3O_3$, calculated with reference to the dried substance.

Identity tests

• Either tests A and D or tests B, C and D may be applied.

A. Carry out the examination as described under 1.7 Spectrophotometry in the infrared region. The infrared absorption spectrum is concordant with the spectrum obtained from gallamine triethiodide RS or with the *reference spectrum* of gallamine triethiodide.

B. The absorption spectrum of a 10 µg/mL solution in hydrochloric acid (0.01 mol/l) VS, when observed between 220 nm and 350 nm exhibits a maximum at about 225 nm; the absorbance of a 1-cm layer at this wavelength is between 0.50 and 0.55.

C. Dissolve 0.05 g in 5 mL of water and add 1 mL of potassio-mercuric iodide TS; a yellow precipitate is produced.

D. A 0.01 g/mL solution yields reaction A described under 2.1 General identification tests as characteristic of iodides.

Clarity and colour of solution. A freshly prepared solution of 0.20 g in 10 mL of carbon-dioxide free water R is clear and not more intensely coloured than standard colour solution Yw1 when compared as described under 1.11 Colour of liquids.

Sulfated ash. Not more than 1.0 mg/g.

Loss on drying. Dry to constant weight at 105°C; it loses not more than 15 mg/g.

Acidity or alkalinity. To 50 mL of water add 0.2 mL of methyl red/ethanol TS and adjust to pH 6 by adding either sulfuric acid (0.01 mol/l) VS or sodium hydroxide (0.02 mol/l) VS until the colour is orange-yellow. Add 1.0 g of the substance being examined and shake to dissolve; not more than 0.2 mL of either sulfuric acid (0.01 mol/l) VS or sodium hydroxide (0.02 mol/l) VS is required to restore the original orange-yellow colour.

Related substances. Carry out the test as described under 1.14.1 Thin-layer chromatography, using cellulose R1 as the coating substance and a mixture of 17 volumes of glacial acetic acid R, 17 volumes of water and 66 volumes of 1-butanol R as the mobile phase. Apply separately to the plate 10 µl of each of 2 solutions in ethanol (~750 g/l) TS containing (A) 5.0 mg of the test substance per mL and (B) 0.05 mg of the test substance per mL. Allow the mobile phase to ascend 10 cm. After removing the plate from the chromatographic chamber, dry it in a current of warm air and spray it with potassium iodoplatinate TS. An

elongated blue spot, which may appear to be double, is obtained on the chromatogram from test solution A. Any spot above the principal spot obtained with solution A is not more intense than the principal spot obtained with solution B.

Assay. Dissolve about 0.5 g, accurately weighed, in 40 mL of acetone R, and add 15 mL of mercuric acetate/acetic acid TS. Titrate with perchloric acid (0.1 mol/l) VS, determining the end-point potentiometrically as described under 2.6 Non-aqueous titration, Method A. Each mL of perchloric acid (0.1 mol/l) VS is equivalent to 29.72 mg of $C_{30}H_{60}I_3N_3O_3$.