

minutes should be not less than 80%.

Dissolution rate (%) with respect to the labeled amount of propylthiouracil ($C_7H_{10}N_2OS$)

$$= W_S \times \frac{A_T}{A_S} \times \frac{1}{C} \times 90$$

W_S : Amount (mg) of propylthiouracil for assay.

C : Labeled amount (mg) of propylthiouracil ($C_7H_{10}N_2OS$) in 1 tablet.

Assay Weigh accurately and powder not less than 20 Propylthiouracil Tablets. Weigh accurately a portion of the powder, equivalent to about 0.3 g of propylthiouracil ($C_7H_{10}N_2OS$), transfer to a Soxhlet extractor, and extract with 100 mL of acetone for 4 hours. Evaporate the acetone extract by warming on a water bath to dryness. To the residue add 30 mL of water, and proceed as directed in the Assay under Propylthiouracil.

$$\begin{aligned} \text{Each mL of 0.1 mol/L sodium hydroxide VS} \\ = 8.512 \text{ mg of } C_7H_{10}N_2OS \end{aligned}$$

Containers and storage Containers—Well-closed containers.

Storage—Light-resistant.

Protamine Sulfate

硫酸プロタミン

Protamine Sulfate is the sulfate of protamine prepared from the mature spermary of fish belonging to the family *Salmonidae* and others.

Description Protamine Sulfate occurs as a white to light grayish yellow powder.

It is sparingly soluble in water, and practically insoluble in ethanol (95) and in diethyl ether.

The pH of a solution of Protamine Sulfate (1 in 100) is between 4.0 and 7.0.

Identification (1) Dissolve 1 mg of Protamine Sulfate in 2 mL of water, add 5 drops of a solution prepared by dissolving 0.1 g of 1-naphthol in 100 mL of diluted ethanol (99.5) (7 in 10) and 5 drops of sodium hypochlorite TS, then add sodium hydroxide TS until the solution becomes alkaline: a vivid red color develops.

(2) Dissolve 5 mg of Protamine Sulfate in 1 mL of water by warming, add 1 drop of a solution of sodium hydroxide (1 in 10) and 2 drops of copper (II) sulfate TS: a red-purple color develops.

(3) An aqueous solution of Protamine Sulfate (1 in 20) responds to the Qualitative Tests for sulfate.

Purity (1) Clarity and color of solution—Dissolve 0.10 g of Protamine Sulfate in 10 mL of water: the solution is clear and colorless.

(2) Nitrogen—Weigh accurately about 0.01 g of Protamine Sulfate, previously dried at 105°C to constant mass, and perform the test as directed under the Nitrogen Determination: not more than 0.255 mg of nitrogen (N: 14.01) is found for each mg of Protamine Sulfate.

Potency as antiheparin (i) Sample solution—Dissolve

20.0 mg of Protamine Sulfate in isotonic sodium chloride solution to make exactly 20 mL.

(ii) Heparin sodium standard solution—Dissolve 10.0 mg of Heparin Sodium Reference Standard in isotonic sodium chloride solution to make a standard solution containing exactly 0.7 mg per mL.

(iii) Sulfated whole blood—Place 250 mL of fresh bovine blood in a wide-mouthed stoppered polyethylene bottle containing 50 mL of a solution of sodium sulfate decahydrate (9 in 50), and store between 1°C and 4°C. Remove any clotted substance before use.

(iv) Thrombokinase extract—To 1.5 g of acetone-dried cattle brain add 60 mL of water, extract at 50°C for 10 to 15 minutes, and centrifuge for 2 minutes at 1500 revolutions per minute. To the supernatant add cresol to make 0.3% as a preservative, and store between 1°C and 4°C. The potency of this solution will be maintained for several days.

(v) Procedure—To one of 10 clean, glass-stoppered test tubes, 13 mm in inside diameter and 150 mm in length, transfer 1.30 mL of isotonic sodium chloride solution and 0.20 mL of thrombokinase extract, then add exactly 1 mL of sulfated whole blood, stopper the tube, mix the contents by inverting once, and note the time on a stop watch. When the solid clot which is formed at the bottom of the tube does not fall on inverting the tube, designate this time as the control clotting time. Adjust appropriately the volume of thrombokinase extract so that the control clotting time is between 2 and 3 minutes. To the nine remaining tubes add 0.50 mL of the sample solution and the same volume of thrombokinase extract as was used in the previous measurement of the control clotting time, pipet into the tubes 0.43 mL, 0.45 mL, 0.47 mL, 0.49 mL, 0.50 mL, 0.51 mL, 0.53 mL, 0.55 mL and 0.57 mL of the heparin sodium standard solution, respectively, and make the volume in each tube up to 1.50 mL by adding isotonic sodium chloride solution. Add finally 1.0 mL of sulfated whole blood, stopper, mix the contents by inverting once, and determine the clotting times with a stop watch. The estimated ratio, v/V , is between 0.85 and 1.15, where v is the volume of the heparin sodium standard solution and V is the volume of the sample solution in that tube in which the clotting time is most nearly the same as the control clotting time.

Containers and storage Containers—Tight containers.

Protamine Sulfate Injection

硫酸プロタミン注射液

Protamine Sulfate Injection is an aqueous solution for injection.

The amount of Protamine Sulfate should be labeled.

Method of preparation Prepare as directed under Injections, with Protamine Sulfate.

Description Protamine Sulfate Injection is a colorless liquid. It is odorless or has the odor of preservatives.

Identification (1) Dilute a volume of Protamine Sulfate Injection, equivalent to 1 mg of Protamine Sulfate according to the labeled amount, with water to make 2 mL, and