

**Hydroxyethylcellulose (Hydroxyethylcellulosum)**

**Chemical name.** Cellulose 2-hydroxyethyl ether; CAS Reg. No. 9004-62-0.

**Description.** A white or yellowish white powder or granules; odourless or almost odourless.

**Solubility.** Soluble in hot and cold water forming a colloidal solution; practically insoluble in acetone R, ethanol (~750 g/l) TS, ether R, and toluene R.

**Category.** Stabilizer; suspending agent.

**Storage.** Hydroxyethylcellulose should be kept in a well-closed container.

**Labelling.** The designation on the container of hydroxyethylcellulose should state its viscosity.

**Additional information.** Hydroxyethylcellulose may contain suitable anti-caking agents. After drying, it is hygroscopic.

**Requirements**

**Definition.** Hydroxyethylcellulose is a partially substituted poly(hydroxyethyl) ether of cellulose.

**Identity tests**

A. Disperse 1 g of dried Hydroxyethylcellulose in 50 mL of carbon-dioxide-free water R. After 10 minutes, dilute to 100 mL with the same solvent and stir until completely dissolved. While stirring, heat 10 mL on a water-bath (keep the remaining solution for test B, for "pH value", and for "Reducing substances"); no cloudiness appears above 50 °C and no precipitate is formed.

B. Place 1 mL of the above solution onto a glass plate and allow to evaporate; a thin film is formed.

C. Dissolve 5 mg in 1 mL of water, add 1 mL of phenol (50 g/l) TS and 5 mL of sulfuric acid (~1760 g/l) TS, shake carefully, and allow to cool; a red colour develops.

**Heavy metals.** Use 1.0 g for the preparation of the test solution as described under [2.2.3 Limit test for heavy metals](#), Procedure 3; determine the heavy metals content according to Method A; not more than 20 µg/g.

**Sulfated ash.** Not more than 50 mg/g.

**Loss on drying.** Dry to constant mass at 105 °C; it loses not more than 100 mg/g.

**pH value.** pH of the solution prepared in identity test A, 5.5-8.5.

**Reducing substances.** Add 5 mL of water to 5 mL of the solution prepared in identity test A, then add 15 drops of sulfuric acid (0.5 mol/l) VS and 1.5 mL of potassium permanganate (0.002 mol/l) VS. Heat the mixture to 50 °C for not less than 5 minutes; the colour of the solution remains unchanged.