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GLUCOSE, LIQUID, SPRAY-DRIED

Glucosum liquidum dispersione desiccatum

DEFINITION

Spray-dried liquid glucose is a mixture of glucose, disaccharides and polysaccharides, obtained by the partial hydrolysis of starch. The degree of hydrolysis, expressed, as dextrose equivalent (DE), is not less than 20 and is within 10 per cent of the value stated on the label.

CHARACTERS

A white or almost white, slightly hygroscopic powder or. granules, freely soluble in water.

IDENTIFICATION

A. Dissolve 0.1 *g* in 2.5 ml of *water R* and heat with 2.5 ml of *cupri-tartaric solution R*. A red precipitate is formed.

B. Dip, for 1 s, a suitable stick with a reactive pad containing glucose-oxidase, peroxidase and a hydrogen-donating substance, such as tetramethylbenzidine, *in* a 5 g/l solution of the substance to be examined. Observe the colour of the reactive pad; within 60 *s* the colour changes from yellow to green or blue.

C. It is a powder or granules.

D. It complies with the test for dextrose equivalent (see Tests).

TESTS

Solution S. *Dissolve* 12.5 *g* in *carbon dioxide-free water R* and dilute to 50.0 ml with the same solvent.

pH (2.2.3). The pH of a mixture of 30 ml of solution S and 1 ml of a 223.6 g/l solution of *potassium chloride R* is 4.0 to 7.0.

Sulphur dioxide (2.5.29). Not more than 20 ppm.

Heavy metals (2.4.8). Dilute 4 ml of solution S to 30 ml with *Water R*. The solution complies with limit test E (10 ppm). Prepare the standard using 10 ml of *lead standard solution ppm Pb) R*.

Loss on drying (2.2.32). Not more than 6.0 per cent, determined on 10.00 g by drying in an oven at 100-105 °C. Sulphated ash (2.4.14). Not more than 0.5 per cent, determined on 1.0 g.

Dextrose equivalent. Accurately weigh an amount of the sample to be examined equivalent to 2.85 g to 3.15 g of reducing carbohydrates, calculated as dextrose equivalent, into a 500 ml volumetric flask. Dissolve in *water R* and dilute to 500.0 ml with the same solvent. Transfer the solution to a 50 ml burette.

Pipette 25.0 ml of *cupri-tartaric solution R* into a 250 ml flask and add 18.5 ml of the sample solution from the burette, mix and add boiling chips. Place the flask on a hot plate, previously adjusted so that the solution begins to boil within 2 mint 15 s. Allow to boil for exactly 120 s, add 1 ml of a 1 g/l solution of *methylene blue R* and titrate with the sample solution (V_1) until the blue colour disappears. Maintain the solution at boiling throughout the titration.

Standardise the cupri-tartaric solution using a 6.00 g/l solution of *glucose R* (V_0).

Calculate the dextrose equivalent (DE) from the equation:

$$DE = (300 \times V_0 \times 100) / (V_1 \times M \times D)$$

V_0 = total volume of glucose standard solution, in millilitres,
V_1 = total volume of sample solution, in millilitres,
M = sample weight, in grams,
D = percentage content of dry matter in the substance.

Microbial contamination. Total viable aerobic count *(2.6.12)* not more than 10^3 bacteria and 10^z fungi per gram, determined by plate count. It complies with the tests for *Escherichia coli* and *Salmonella (2.6.13)*.

LABELLING

The label states the dextrose equivalent (DE).