

POTATO STARCH

Solani amylum

DEFINITION

Potato starch is obtained from the tuber of *Solanum tuberosum* L.

CHARACTERS

A very fine white powder which creaks when pressed between the fingers; practically insoluble in cold water and in alcohol. Potato starch does not contain starch grains of any other origin. It may contain a minute quantity, if any, of fragments of the tissue of the original plant.

IDENTIFICATION

A. Examined under a microscope using a mixture of equal volumes of *glycerol* R and *water* R, it presents large and small granules, irregularly shaped, ovoid or pear-shaped, 30 µm to 100 µm in size or rounded, are discoid or 10 µm to 390 µm in size. There are occasional compound granules having 2 to 4 components. The ovoid and pear-shaped granules have an eccentric hilum and the rounded granules acentric or slightly eccentric hilum. All granules show clearly visible concentric striations. Between crossed nicol prisms, the granules show a distinct black cross intersecting at the hilum.

B. Suspend 1 g in 50 ml of *water* R, boil for 1 min and cool. A thick, opalescent mucilage is formed.

C. To 1 ml of the mucilage obtained in identification test B, add 0.05 ml of *iodine solution* R1. A dark-blue colour is produced which disappears on heating.

TESTS

pH (2.2.3). Shake 5.0 g with 25.0 ml of *carbon dioxide-free water* R for 60 s. Allow to stand for 15 min. The pH of the solution is 5.0 to 8.0.

Iron (2.4.9) Shake 1.5 g with 15 ml of *dilute hydrochloric acid* R. Filter. The filtrate complies with the limit test for iron (10ppm).

Foreign matter (2.8.2). Examined under a microscope using a mixture of equal volumes of *glycerol* R and *water* R, not more than traces of cell walls and of cytoplasmic residues are present.

Total protein. Not more than 0.1 per cent of total protein (corresponding to 0.017 per cent N₂, conversion factor: 5.7), determined on 6.0 g by sulphuric acid digestion (2.5.9) modified as follows: wash any adhering particles from the neck into the flask with 25 ml of *sulphuric acid* R; continue the heating until a clear solution is obtained; add 45 ml of *strong sodium hydroxide solution* R.

Oxidising substances (2.5.30). It complies with the test for oxidising substances.

Sulphur dioxide (2.5.29). Not more than 50 ppm.

Loss on drying (2.2.32). Not more than 20.0 per cent, determined on 1.000 g by drying in an oven at 130 °C for 90 min.

Sulphated ash. (2.4.14). Not more than 0.6 per cent, determined on 1.0 g.

Microbial contamination. Total viable aerobic count (2.6.12) not more than 10³ bacteria and not more than 10² fungi per gram, determined by plate-count. It complies with the test for *Escherichia coli* (2.6.13)