

## 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 N<sub>2</sub>, 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 10<sup>3</sup> bacteria and not more than 10<sup>2</sup> fungi per gram, determined by plate-count. It complies with the test for *Escherichia coli* (2.6.13)