1. Phosphorylated starches and miscellaneous inorganic esters

By Solarek, Daniel B.
Edited By:Wurzburg, Otto B
From Modif. Starches: Prop. Uses (1987), 97-112. Language: English, Database: CAPLUS

A review with 193 refs. on starch mono- and diphosphates and their properties and uses. Starch sulfates and nitrates and their analyses were also discussed.

~2 Citings

2. Infrared study of various nitrated polysaccharides and their structural characterization

By Dawoud, Abdel Fattah; Marawan, Ashraf
From Carbohydrate Research (1973), 26(1), 65-70. Language: English, Database: CAPLUS, DOI:10.1016/S0008-6215(00)85022-3

Ir spectra for a number of polysaccharides and their nitrated derivs. were obtained. The frequency range 730-960 cm-1 is useful for identification of the polysaccharides, and the region 900-1350 cm-1 is more suitable for distinguishing the nitrated materials. The strong intensity of the nitrate bands limits the interpretation of spectra below 960 cm-1, but above this frequency the absorption bands of nitrated polysaccharides are generally sharper and more clearly defined than the corresponding bands of the parent polysaccharides. Data on the C-O-C bridge, C-C ring. C-O, and C-OH frequencies and on the C-H deformation and stretching frequencies were obtained. The use of ir spectroscopy for the quantitative detn. of nitrate groups in nitrated polysaccharides is discussed.

~1 Citing

3. Characterization of starch and its derivatives

By Monzon Bano, Enrique
From Ion (Madrid) (1972), 32(367), 90-4, 97-9. Language: Spanish, Database: CAPLUS

The purification of starch samples, and various methods for elemental anal., microscopic anal., chem. identification of reactive groups, ir spectral anal., and tests of coloration by dyes are described for use in characterization of starch and its derivs.

~0 Citings

4. Stability of the nitrates of starch, amylose, and amylopectin

By Mustafa, Ahmed; Dawoud, Abdel F.; El-Shorbani, Salah
From Staerke (1967), 19(7), 212-18. Language: English, Database: CAPLUS, DOI:10.1002/star.19670190704

cf. CA 58: 654d. Whole starch, amylose, and amylopectin were nitrated by HNO_3/H_2SO_4 and by HNO_3 alone. The stabilities of the products were compared. The total sulfate impurities of amylopectin nitrate were similar to whole starch nitrate, while those of amylose nitrate were lower. The best stabilization, as measured by the Bergmann-Junk test, of the mixed acid products was obtained by boiling for 2 hrs. with H_2O at 130° followed by boiling with 0.075% Na_2CO_3 for 24 hrs. Bergmann-Junk values (mg. N/g. sample) in the order of nitration products of starch, amylopectin, and amylose were 1.7, 1.75, and 1.7. Direct boiling with Na_2CO_3 was less effective: 2.5, 2.6, 2.5. For the HNO_3 products, boiling for 2 hrs. with H_2O at 135° gave 2.8, 3.1, and 2.6; and followed by 12 hrs. reflux with Na_2CO_3 gave 1.5, 1.5, and 1.4, resp. Direct boiling with Na_2CO_3 for 96 hrs. gave 1.6, 1.6, and 1.5, resp., and thus approached the stability of cellulose nitrate (1-1.25).

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