

## Summaries of UK Patent Applications

As the size of *Carbohydrate Polymers* is increasing to six issues per year, these patent summaries will now appear in every other issue.

**Hot Water Dispersible Starches.** GB 2107339A. Filed 26 August 1982, published 27 April 1983. Applicants – CPC International Inc., New Jersey, USA.

A starch-surfactant product readily dispersible in hot or boiling water is described. The product is prepared by subjecting a blend of granular starch and a fatty acid-containing surfactant to heat treatment. (50 to 120°C at low moisture contents (10–40%).)

Acid resistant products with good freeze-thaw stability were obtained when the starch-surfactant mixture was blended with gums such as guar and xanthan.

**Surface Active Chitosan Salts and Hair Treatment Media.** GB 2107340A. Filed 8 October 1982, published 27 April 1983. Applicants – Wella AG, Darmstadt, West Germany.

Surface active chitosan salts are prepared by dissolving chitosan in an aqueous or aqueous-alcoholic solution containing a specific class of surfactants. The resultant compound has uses in various cosmetic products.

**Zirconium Crosslinkers for Solvatable Polysaccharide Solutions.** GB 2108122A. Filed 29 October 1981, published 11 May 1983. Applicants – Dow Chemical Co., Michigan, USA.

Novel crosslinked gels useful for fractionating subterranean formations are described. The gels are prepared by the action of a soluble zirconium crosslinking agent on polysaccharides such as guar and hydroxypropylguar. The zirconium crosslinking compound is activated by water.

**Inclusion Compounds of Steroids with  $\gamma$ -Cyclodextrin.** GB 2109381A. Filed 26 October 1982, published 2 June 1983. Applicants – Richter Gedeon Vegyeszeti Gyar RT, Budapest, Hungary.

These complexes are very much more water soluble than uncomplexed steroids.  $\gamma$ -Cyclodextrin is metabolised more rapidly than  $\alpha$ - or  $\beta$ -cyclodextrin and therefore shows less possible toxic effects.

**Process for the Production of a Pullulan Composition.** GB 2109391A. Filed 11 November 1981, published 2 June 1983. Applicants – KK Hayashibara Seibutsu, Kagaku Kenkyujo, Okayama, Japan.

The production of pullulan with a narrow molecular weight distribution ( $\bar{M}_w/\bar{M}_n$  less than 1.5) is described. The process involves partial hydrolysis with acid or an enzyme followed by fractional precipitation with an organic solvent. The products are suitable as plasma extenders, film formers and could have food uses.

**Isotope Separation.** GB 2109619A. Filed 20 August 1982, published 2 June 1983. Applicants – UK Atomic Energy Authority, London, UK.

3-thio-2-hydroxypropyl-ether-sepharose is used to separate  $^{195m}\text{Au}$  from  $^{195m}\text{Hg}$ . The former has medical uses.

**Alcohol-Containing Powders.** GB 2110235A. Filed 26 March 1982, published 15 June 1983. Applicants – Sato Shokuhin Kogyo KK, Aichi-Ken, Japan.

Alcohol-containing powders are prepared by mixing a starch hydrolysate with an alcohol-containing aqueous solution and spray-drying the resulting liquid mixture. Best results are obtained if at least 50% of the oligosaccharides have a degree of polymerisation up to 8 and 10% of the saccharides have a degree of polymerisation up to 2.

**Aqueous Well Servicing Fluids.** GB 2110698A. Filed 21 September 1982, published 22 June 1983. Applicants – NL Industries Inc., New York, USA.

A well servicing fluid with increased viscosity and reduced fluid loss is described. It contains a mixture of hydroxyethyl starch and either a cellulose derivative or xanthan gum. Both the cellulose derivative and xanthan gum react synergistically with the starch.

**Aqueous Well Servicing Fluids.** GB 2110699A. Filed 7 October 1982, published 22 June 1983. Applicants – NL Industries Inc., New York, USA.

The fluid loss of aqueous well servicing fluids can be decreased by adding a crosslinked hydroxyethyl starch and a hydroxyethyl cellulose to the aqueous fluid which preferably contains at least one water soluble salt of a multi-valent metal ion, e.g.  $\text{CaCl}_2$ ,  $\text{CaBr}_2$ ,  $\text{ZnBr}_2$  or a mixture of these.

**Process for Preparing an Alkali Metal Salt of Carboxymethyl Cellulose.** GB 2111058A. Filed 23 November 1982, published 29 June 1983. Applicants – NL Industries Inc., New York, USA.

An alkali metal salt of carboxymethyl cellulose is prepared by first reacting cellulose with an alkali metal hydroxide at temperatures less than  $35^\circ\text{C}$  in an aqueous solution containing isopropanol. The alkali metal cellulose is then reacted with monochloroacetic acid.

The product has improved stability in the presence of calcium and enhanced rheological properties, making it suitable for application as a borehole drilling fluid.

**Process for Producing Cellulose Acetate.** GB 2111059A. Filed 26 November 1982, published 29 June 1983. Applicants – Daicel Chemical Industries Ltd, Osaka, Japan.

A process for producing cellulose diacetate is described.

**Polysaccharide Having Interferon-Inducing and Antitumour Activity.** GB 2111070A. Filed 1 November 1982, published 29 June 1983. Applicants – Kitasato Institute, Tokyo, Japan.

An acidic polysaccharide exhibiting both interferon-inducing activity and antitumour activity is obtained by culturing chlorella cells belonging to the genus chlorella and isolating the polysaccharide from the cultured cells.

**Viscous Heavy Brines and Method for their Manufacture.** GB 2111104A. Filed 3 December 1982, published 29 June 1983. Applicants – NL Industries, Texas, USA.

The viscosity of heavy brines can be increased by adding certain homogeneously substituted cellulose sulphate esters. The effectiveness of these materials depends upon the degree of substitution of sulphate groups into the polymer.