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SUMMARIES OF UK PATENT APPLICATIONS

Flocculant Composition. GB 2058034A. Filed 4 July 1980, published 8 April 1981. Applicants – United States Borax and Chemical Corporation, California, USA.

A flocculant composition which may be used to clarify and purify tailings slurry from fluorspar flotation comprises a cationic polygalactomannan derivative and a poly-(ethylene oxide).

Heteropolysaccharide S-88. GB 2058106A. Filed 2 September 1980, published 8 April 1981. Applicants – Merck and Co. Inc., New Jersey, USA.

Compound S-88 may be prepared by fermentation of a suitable nutrient medium with a hitherto undescribed organism which is an unnamed *Pseudomonas* species. A description of the bacterial strain and fermentation conditions is given. The chemical composition is in the weight range 10-20% glucuronic acid, 10-30% mannose, 30-40% glucose and 35-45% rhamnose; the polymer also contains 3-7% acetyl groups. The gum has excellent heat stability showing no viscosity loss on autoclaving at 121°C. Particular uses include oil-well drilling fluids and muds.

Heteropolysaccharide S-130. GB 2058107A. Filed 2 September 1980, published 8 April 1981. Applicants – Merck and Co. Inc., New Jersey, USA.

Compound S-130 may be prepared by fermentation of a suitable nutrient with a hitherto undescribed organism which is an unnamed *Alcaligens* species. A description of the bacterial strain and fermentation conditions is given. The chemical composition is in the weight range 10-20% glucuronic acid, 10-25% mannose, 20-40% glucose and

30-60% rhamnose; the polymer also contains 3-5% acetyl groups. The gum shows good stability to acids and salts and excellent heat stability (no viscosity loss upon autoclaving at 121°C and 15 psi for 15-20 min). An example of an oil-well drilling mud containing the gum is given.

High Viscosity Aqueous Gels Comprising Organic Titanate Complexing Agents. GB 2058750A. Filed 4 June 1980, published 15 April 1981. Applicants – Halliburton Company, Oklahoma, USA.

Organic titanate complexing agents are used to promote crosslinking of hydrated polysaccharides and synthetic polymers. The high viscosity gels produced have a variety of uses including suspending explosive mixtures and use in mining, drilling, etc.

Heteropolysaccharide S-84. GB 2058812A. Filed 15 September 1980, published 15 April 1981. Applicants – Merck and Co. Inc., New Jersey, USA.

This polysaccharide is prepared by fermentation of a suitable nutrient medium with a hitherto undescribed organism which is an unnamed *Pseudomonas* species. A description of the bacterial strain and the fermentation conditions is given. The composition of the polysaccharide by weight is in the range 8-15% glucuronic acid, 40-50% glucose 35-45% mannose, 5-15% rhamnose and 3-9% arabinose; it also contains 1-5% acetyl and 2-7% pyruvate groups. Excellent heat stability (28% loss in viscosity when autoclaved for 15 min at 15 psi), good compatibility with salts, good suspending and film forming abilities are claimed. General uses include thickening and as a stabilising agent in aqueous systems. Especially useful in formulating explosive gels.

β-1,3-Glucanpolyol, and its Preparation and Composition Comprising it. GB 2061306A. Filed 29 August 1980, published 13 May 1981. Applicants – Mieto Sangyo Kabushiki Kaisha, Nagoya, Japan.

β-1,3-Glucan polyol with an intrinsic viscosity (η) of 1-10 dl/g and a backbone of β-1,3-glucopyranose units. Produced from the β-1,3-glucan by oxidation with periodic acid or a periodate and subsequent reduction. Anti-tumour activity claimed.

Cyclodextrin Complexes, their Preparation and Pharmaceutical Compositions Containing Them. GB 2061987A. Filed 11 December 1979, published 20 May 1981. Applicants – Chinoin Gyogyszer es Vegyeszeti Termakek Gyara Rt., Budapest, Hungary.

Allicin is stabilised as an inclusion complex with a cyclodextrin. The complex may be prepared by contacting an aqueous solution of cyclodextrin with a solution of allicin in a water miscible solvent. The complex may be formulated into a pharmaceutical composition having anti-microbial and/or fungistatic activity in a conventional manner.

Recovery of Xanthan Gum. GB 2061988A. Filed 23 September 1980, published 20 May 1981. Applicants – Tate and Lyle Ltd, London, UK.

Xanthan gum is recovered by adding to the fermentation broth a subprecipitant amount of an organic solvent such as isopropanol, removing solids from the broth at 100°C or more by filtration, and precipitating the gum by the addition of more organic solvent. Heat degradation of the gum during the solids removal is thereby lessened.

Absorbent Regenerated Cellulose Fibres. GB 2062652A. Filed 1 October 1980, published 28 May 1981. Applicants – Chemiefaser Lenzing Aktiengesellschaft, Lenzing, Austria.

Regenerated cellulose fibres prepared by adding an anionically modified polysaccharide to viscose. Examples of the added polysaccharide include carboxymethyl cellulose and carboxymethyl starch. The mixed fibres have a higher water and liquid retention capacity.

Process for the Cationisation of Starch, Cationic Starches so Prepared and their Uses. GB 2063282A. Filed 31 August 1979, published 3 June 1981. Applicants – Roquette Freres, Lestrem, France.

The preparation and some uses of cationic starches are described. The starch is prepared by reacting dry starch with a cationic reactant such as an epoxy compound in the presence of an alkali at temperatures preferably in the range 60–80°C. The cationic starch which is not crosslinked has a high viscosity. A wide range of applications are mentioned including textile printing, plaster manufacture and in the paint, ink or varnish industries.

Sulphated Biopolymer. GB 2064568A. Filed 6 November 1980, published 17 June 1981. Applicants – Texaco Development Corporation, New York, USA.

Sulphated biopolymers are prepared by reacting polysaccharides (e.g. xanthan gum) in aqueous solution with a sulphating reagent such as sulphuric acid in the presence of aliphatic alcohol. Solutions of the sulphated material are less shear thinning than the original polymer giving advantages in oil recovery.

Clabber-free Xanthan Gum. GB 2064569A. Filed 10 November 1980, published 17 June 1981. Applicants – Merck and Co. Inc., New Jersey, USA.

Oil-in-water emulsions stabilised with xanthan gum are known to become semi-gelled or 'clabbered' upon exposure to high shear conditions such as those encountered in colloid mills or homogenisers. This is undesirable particularly in products like dietetic salad dressings which have low oil contents. A novel form of xanthan gum is disclosed which is produced by shearing pasteurised xanthan gum. This gum gives smooth flowing 'clabber free' emulsions. Uses in salad dressings and oil-well drilling are discussed.

Enzymatic Method for Improving the Injectability of Polysaccharides. GB 2065688A. Filed 21 October 1980, published 1 July 1981. Applicants – United States Department of Energy, Washington, USA.

A controlled enzymic hydrolysis method for enhancing the ability of polysaccharides in aqueous solutions to flow through a porous medium is described. The hydrolysis is insufficient to decrease the viscosity of the aqueous polysaccharide by more than 25%. Examples of the treatment of scleroglucan and xanthan gum with endoenzymes are given. The partially hydrolysed polysaccharide has advantages in oil recovery applications.

Enzymatic Clarification of Polysaccharide Solutions. GB 2065689A. Filed 1 December 1980, published 1 July 1981. Applicants – Tate and Lyle Ltd, London, UK.

Acid and/or neutral proteolytic enzymes are used for the degradation of the cells of the genus *Xanthomonas*, as well as those of other polysaccharide-producing organisms, in order to clarify xanthan gum or other polysaccharides. The protease may be elaborated by *Bacillus subtillus* or *Aspergillus niger*.

Borated Polysaccharide or Polyvinyl Alcohol Absorbents and Absorbent Products. GB 2067214A. Filed 16 December 1980, published 22 July 1981. Applicants – Colgate-Palmolive Co., New York, USA.

A highly absorbent material for use as a liquid absorbent in nappies and such products was prepared by hydrating a *cis*-1,2-diol material, e.g. guar gum or polyvinyl alcohol, and crosslinking it with borate ions and then drying the material.

Process and Apparatus for the Isolation of Vapours from Gas Mixtures. GB 2067090A. Filed 28 October 1979, published 22 July 1981. Applicants – Chinoin Gyogyszer es Vegyeszeti Termekek Gyara Rt., Budapest, Hungary.

Gas mixtures containing the vapours of volatile compounds, e.g. industrial solvents and volatile oils, are contacted with aqueous solutions of cyclodextrins and/or cyclodextrin derivatives. An inclusion complex is formed with the cyclodextrin which after separation from the aqueous phase can be subjected to thermal dissociation. The volatile compound released is isolated from the vapour phase.

Cyclodextrin Complexes; their Preparation and use Thereof to Control Plant Growth. GB 2067583A. Filed 23 December 1980, published 30 July 1981. Applicants – Chinoin Gyogyszer es Vegyeszeti Termakek Gyara Rt., Budapest, Hungary.

Complexes of cyclodextrin with 2-chloroethyl phosphonic acid may be prepared by reacting the two components in aqueous solution. The complexes exert the characteristic ethylene hormonal effect on plants, e.g. accelerating ripening and seed germination. For agricultural use the complexes may be formulated with a carrier and/or adjuvant.

Xanthan Gum. GB 2069516A. Filed 9 December 1980, published 26 August 1981. Applicants – Tate and Lyle Ltd, London, UK.

A method for the preparation of xanthan gum having a lower viscosity and a lower degree of pseudoplasticity than currently available materials, is described. The product has an intrinsic viscosity of less than 14 dl/g. It is prepared by fermentation at a broth temperature in the range 32–38°C.