

## Alkyl glycoside surfactants from starch and sucrose

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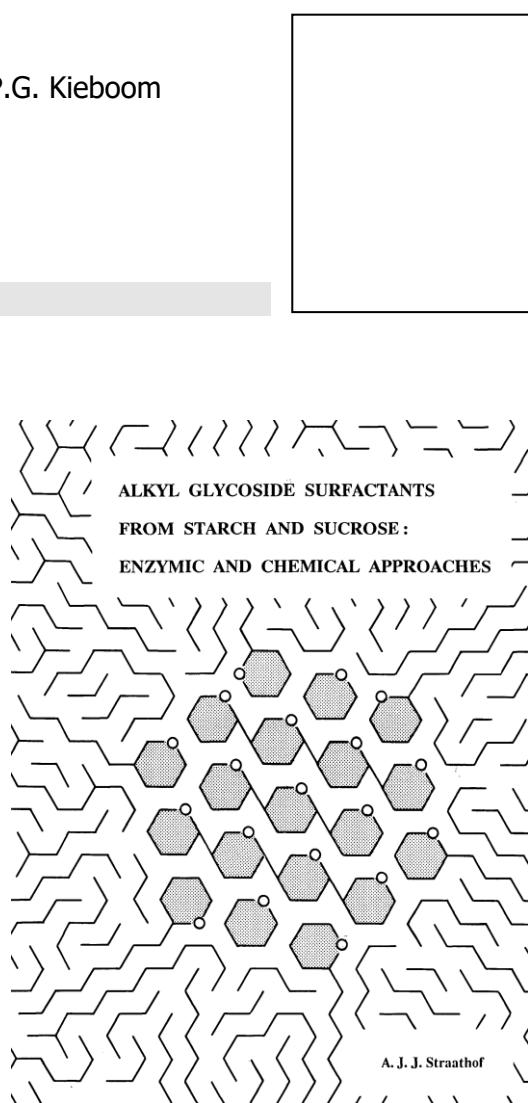
### Description

With starch (glucose) and sucrose as starting materials, a number of principally different conversion procedures towards *O*-alkylated carbohydrates have been investigated. Both enzymic and chemical conversions, without the use of non-volatile toxic solvents, have been taken into consideration. In addition, isolation of a surfactant from the reaction mixture has been considered to be an integral part of the synthesis.

### Dissertation

A.J.J. Straathof, Alkyl glycoside surfactants from starch and sucrose: Enzymic and chemical approaches. PhD thesis, Delft University of Technology, 1988.

<http://resolver.tudelft.nl/uuid:6610ed30-d6ba-4003-810d-ec6ae3c2f4e8>



### Publications from the dissertation

1. A.J.J. Straathof, A.P.G. Kieboom and H. van Bekkum: A note on the esterification of  $\alpha$ -D-glucopyranosyl phosphate with benzyl halides, *Recl. Trav. Chim. Pays-Bas* **104** (1985) 65-68.
2. A.J.J. Straathof, A.P.G. Kieboom and H. van Bekkum: Invertase-catalysed fructosyl transfer in concentrated solutions of sucrose, *Carbohydr. Res.* **146** (1986) 154-159.
3. A.J.J. Straathof, J. Romein, F. van Rantwijk, A.P.G. Kieboom and H. van Bekkum: Preparation of long-chain alkyl  $\alpha$ -D-glucopyranosides by alcoholysis of 1,2;5,6-di-*O*-isopropylidene- $\alpha$ -D-glucofuranose, *Starch-Stärke* **39** (1987) 362-368.
4. H. van Koningsveld, J.C. Jansen and A.J.J. Straathof: The crystal structure of anhydrous octyl  $\alpha$ -D-glucopyranoside. A comparison with its hemi- and monohydrate, *Acta Crystallogr. C* **44** (1988) 1054-1057.
5. A.J.J. Straathof, H. van Bekkum and A.P.G. Kieboom: Efficient preparation of octyl  $\alpha$ -D-glucopyranoside monohydrate: A recirculation procedure involving water removal by product crystallisation, *Starch-Stärke* **40** (1988) 229-234.
6. A.J.J. Straathof, H. van Bekkum and A.P.G. Kieboom: Preparation of 1,6-anhydroglucose from (1 $\rightarrow$ 4)-glucans using microwave technology, *Recl. Trav. Chim. Pays-Bas* **107** (1988) 647-648.

7. A.J.J. Straathof, H. van Bekkum and A.P.G. Kieboom: Solid-state and solution properties of octyl D-glucopyranosides, [Starch-Stärke](#) **40** (1988) 438-440.
8. A.J.J. Straathof, J.P. Vrijenhoef, E.P.A.T. Sprangers, H. van Bekkum and A.P.G Kieboom: Enzymic formation of  $\beta$ -D-fructofuranosides from sucrose: Activity and selectivity in mixtures of water and alcohol, [J. Carbohydr. Chem.](#) **7** (1988) 223-238.
9. A.J.J. Straathof, H. Vrolijk, H. van Bekkum and A.P.G. Kieboom: Kinetics and mechanism of the acid-catalysed butanolysis of 1,6-anhydroglucose, [Carbohydr. Res.](#) **184** (1988) 163-169.
10. A.J.J. Straathof, A. van Estrik, A.P.G. Kieboom, J.M.A. Baas, and B. van de Graaf, MM2 calculation of the chair-boat equilibrium of 1,6-anhydro- $\beta$ -D-glucopyranose, [Carbohydr. Res.](#) **194** (1989) 296-299.
11. A.J.J. Straathof, H. van Bekkum, A.P.G. Kieboom, Process for the preparation of alkyl glucosides, [EP 378710](#) (1988)
12. A.J.J. Straathof: Carbohydrate-derived surfactants, *Koolhydraten in Nederland*, **4** (1988) 27-30.