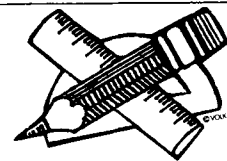


SD&C Abstracts



EDITOR: S. KORITALA • ABSTRACTORS: J.C. Harris, M.G. Kokatnur, F.A. Kummerow, G. List, B. Matijasevic, K.D. Mukherjee, D.B.S. Min, R.A. Reiners, and P.Y. Vigneron

• Detergents

ETHER ALCOHOLS AND ESTER ALCOHOLS—NEW SURFACTANT RAW MATERIALS BASED ON OLEFIN OXIDES. M. Bischoff, U. Zeidler and H. Baumann (Henkel & Cie GmbH, D-4000 Düsseldorf 1, Germany). *Fette Seifen Anstrichm.* 79, 131-5 (1977). Olefin oxides are new versatile raw materials on petrochemical basis. The reaction of internal and terminal olefin oxides having chain lengths that are suitable for the preparation of surfactants with monohydric or polyhydric alcohols is described. The epoxide ring can be ruptured under acidic or alkaline conditions. The reaction rate has been studied as a function of the parameters. Interesting products having surfactant character are obtained by oxalkylation and/or sulfation of the products resulting from the reaction of epoxides with alcohols. Furthermore, a second group of products derived from the epoxides—the ester alcohols—is described and the method for their preparation from olefin oxides and carboxylic acids followed by their derivatization to non-ionic and anionic surfactants is given.

A SIMPLE RAPID METHOD FOR DIRECT DETERMINATION OF TOTAL FATTY MATTER IN SOAPS. M.K. Kundu, A.T. Deb and S.P. Gupta (Kusum Products Ltd., Brabourne Rd., Calcutta-1, India). *Fette Seifen Anstrichm.* 79, 285-8 (1977). A rapid single step method for direct determination of total fatty matter (TFM) of soaps has been developed. The procedure involves two-phase titration of a 2% solution of soap in ethanol:2-propanol (4:1 v/v) under alkaline conditions with 0.01 M solution of p-tert. octyl phenoxyethoxy ethyl dimethyl benzyl ammonium chloride (Hyamine 1622) using bromocresol green as indicator. The method eliminates the tedious and time-consuming ether extraction procedure and is applicable in the presence of all non-fatty constituents normally present in soaps and also in the presence of unsaponified oil, if any, in the soap. The TFM of soaps with mean molecular weights varying from 200 to 300 can be determined with reasonable accuracy. The relative standard deviation for 0.04 to 0.11 millimole of TFM (mean molecular weight range 280-300) in soaps is in the range of 0.3-2.0. The method cuts down the time of TFM analysis from a minimum of 2 hours (for conventional ether extraction method) to less than 15 minutes from the time the material is available in solution. A special feature of the method is that it enables determination of alcohol-insolubles as well as free alkali of the soap without necessitating any additional arrangement.

ELECTROSORPTION AND INHIBITING PROPERTIES OF P-TOLUENE-SULFONIC ACID ESTERS. H.-D. Dorfler and E. Muller (Martin-Luther-Univ., Halle (DDR)). *Tenside Deterg.* 14(6), 311-4 (1977). The electrosorption behavior of homologous alkyl esters of p-toluene sulfonic acid was studied with the help of AC polarography according to Breyer. The barrier properties of the adsorption layers of p-toluenesulfonic acid esters were tested by means of DC polarographic current-potential curves. The differential capacity-potential curves, like the examination of the inhibiting effect of the absorption layers of the alkyl esters of p-toluene-sulfonic acid for cadmium and certain other heavy metal ions, indicate that potentially dependent structural changes occur in the adsorption layer.

ASSESSMENT OF SODIUM NITRILOTRIACETATE AS BUILDER IN DETERGENT FORMULATIONS: DETERMINATION OF THE ANTI-FLOCCULATING POWER OF SODIUM NITRILOTRIACETATE COMPARED WITH SOME INORGANIC BUILDERS, USING THE ZETA POTENTIAL TECHNIC. S. Gafa and F. Burzio (Detergent and Surfactant Lab. Montedison, Rho (Milano)). *Tenside Deterg.* 14(6), 315-21 (1977). The process through which the three builders sodium nitrilotriacetate, sodium tripolyphosphate and potassium pyrophosphate exert their antiflocculating effect towards colloidal systems, assumed as artificial pattern of dirt in washing baths, was studied by means of measurements of zeta potential of colloids in hard water, whose hardness is

due to calcium ions. For each builder the critical hardness was characterized above which the zeta potential of the colloid is greatly reduced in absolute value, as well as the flocculation hardness, in relation to which it has reached the potential of flocculation. The features of the compound formed in the different interactions of cation and builder were defined expressing such values of hardness as molar ratios $Ca^{++}/$ builder, and some results of former studies obtained by different techniques were confirmed.

INTERACTIONS OF NONIONIC SURFACE ACTIVE AGENTS WITH TYROTHRINICIN. II. PHYSICAL AND CHEMICAL PROPERTIES OF TYROTHRINICIN AND SOLUBILIZATION OF TENSIDE. K. Thoma, E. Ullmann and L. Patt (Univ. Munchen). *Tenside Deterg.* 14(6), 297-300 (1977). Physical-chemical properties have been researched of tyrocidin and gramicidin, the two components of tyrothricin. The surface active tyrocidin is soluble in water to 1.706% and aggregates at $2.6 \cdot 10^{-4}$ mol/l. Gramicidin is slightly surface active and soluble in water to 0.006%. Solubilization properties of the homologous polyoxyethylene stearates and polyoxyethylene-900-sorbitan fatty acid esters were found to increase with increasing lowering of the antibiotic effect of tyrothricin. The researched dodecyl derivatives do not show this relation. Of all researched compounds polyoxyethylene-400-lauryl ether has the best solubilization properties.

INVESTIGATIONS INTO THE BIODEGRADABILITY OF POLYAMINES. K.H. Popp (BaSF AG, Ludwigshafen). *Tenside Deterg.* 14(6), 310-1 (1977). Report on the biodegradability of diethylenetriamine 3-(2-aminoethyl)-aminopropylamine and N. N'-bis (3-aminopropyl)-ethylene diamine. The tests were carried out in laboratory activation equipment, being based on the test specification relating to the degradable of anionic and nonionic interfacially active substances in detergents and cleaners.

A LOCAL PETROLEUM SULFONATE FOR THE FLOTATION OF SOME MINERALS AND ORES. T.R. Boulos, A.A. Yousef and M. Hilal (Natl. Res. Center, Cairo). *Tenside Deterg.* 14(6), 307-10 (1977). Sodium petroleum sulfonates were prepared by hard sulfonation of the Egyptian Morgan 350-450 C refined neutral oil fraction. The extraction and purification of the sulfonates from the sulfonated oil and residual sludge is described. The physicochemical properties of the oil fraction as well as that of the sulfonates produced are described. The surface activity of the latter and its foaming characteristics were found to be rather similar to that of pure sodium dodecyl benzene sulfonate.

PHOSPHATES, BORATES AND NITRATES—DYNAMIC OF OCCURENCE AND CONVERSION ON THE RHINE. H. Hellmann and M. Schumacher. *Tenside Deterg.* 14(6), 321-5 (1977). The transported total quantities of solved and dissolved phosphates, nitrates and borates in the Rhine in dependence of the water flow rate are represented. The proportional origin of the products is determined, in course of which the private households are recognized as the main source of the phosphates. It is pointed out, that by reason of the supply of the sewerage also of the small villages a substitution of even 50% of the phosphates in detergents will show a measurable effect but no basic change of the water quality.

THE STABILITY OF DISODIUMSULPHOSUCCINATED UNDECYLENIC MONOETHANOLAMIDE IN SHAMPOO FORMULATIONS. D.W. Whymark (Fisons Ltd.). *J. Soc. Cosmet. Chem.* 28(6), 343-9 (1977). Disodiumsulphosuccinated undecylenic monoethanolamide (DSUM) though stable in the pH range 5.0 to 6.5, undergoes hydrolysis at pH 7 forming undecylenic monoethanolamide. An adaption of an established colorimetric method based on the formation of iron (III) hydroxamates by reaction of the ester group in the molecule has been shown to offer sufficient specificity for DSUM for use in stability studies. Simultaneous screening with thin layer chromatography confirmed the specificity. ●