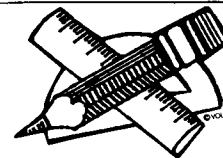


# SD&C Abstracts



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

SPRAY DRYING CHARACTERISTICS OF VARIOUS DETERGENT SLURRY DROPS. T.O.K. Audu (Univ. Benin, Benin City, Nigeria). *Tenside Deterg.* 15(1), 13-5 (1978). The spray drying characteristics of drops of six detergent formulations were studied by suspending a single drop in a wind tunnel. The effect of additives was explained on the basis of the porosity to crust thickness ratio. The mass transfer coefficient was successfully correlated in terms of the diffusivity, crust porosity, and crust thickness.

DETERMINATION OF THE CONSTITUTION OF QUATERNARY AMMONIUM COMPOUNDS BY GAS CHROMATOGRAPHY AND MASS SPECTROSCOPY. K. Linhart and K. Wrabetz (Bayer AG, Leverkusen). *Tenside Deterg.* 15(1), 19-30 (1978). The use of gas chromatography, mass spectroscopy and a combination of these two, provides greater knowledge about the structure of quaternary ammonium compounds which are being widely used as surfactants in many fields. Using a number of practical examples of different kinds of ammonium compounds, the informative value of these analytical techniques is demonstrated.

TETRAETHYLAMMONIUM PER FLUOROOCTANE SULFONATE, A VERSATILE FLUOROSURFACTANT WITH MANY USES. H.G. Klein, J.N. Meussdoerffer, H. Nieckrup and M. Wechsberg (Bayer AG, Leverkusen). *Tenside Deterg.* 15(1), 2-6 (1978). Report on the manufacture of a new kind of anionic fluorinated wetting agent which, in view of its unusual physical and chemical properties, has found numerous uses. Special attention is paid to the product's use in electroplating, the plastics industry, the glass industry, and in the manufacture of photographic film and paper.

MODIFICATION OF PROPERTIES OF ION EXCHANGE MEMBRANES. III. INTERACTION BETWEEN ION EXCHANGE MEMBRANES AND SURFACE ACTIVE AGENTS. T. Sata (Tokuyama Soda Co. Ltd., Tokuyama, Yamaguchi, Japan). *Colloid Polym. Sci.* 256(1), 62-77 (1978). Interaction between ion exchange membranes and surfactants was observed by electrolysing the salt solution containing the surfactant. The behavior of the electrolytic resistance of the membrane during the electrolysis, the current efficiency and the adsorbed or ion-exchanged amount and the permeated amount of the surfactant were observed. The adsorption or ion exchange of ionic surfactant on the membrane was remarkably emphasized by the electric field. The degree of the increase in the electric resistance of the membrane was remarkable when the surfactant had the high molecular weight and the bulky molecular structure. The degree of the increase in the electric resistance was remarkably various according to species of the membrane. Generally though the change of electrolysing properties of the membrane by the ionic surfactant was remarkable in the membrane having the tight structure. The change of the properties of the membrane having the tight structure was easily protected by the polyelectrolyte treatment.

THE ACUTE LETHAL TOXICITY TO RAINBOW TROUT OF AN LAS SURFACTANT AND OF ITS RESIDUES AND DEGRADATION PRODUCTS. V.M. Brown, F.S.H. Abram and L.J. Collins (Water Res. Center, Stevenage Lab.). *Tenside Deterg.* 15(2), 57-9 (1978). Studies made under constant flow conditions to compare the acute lethal toxicity of a linear alkybenzenesulfonate (LAS), before and after its treatment, in admixture with sewage, by the activated-sludge process.

SODIUM-ALUMINUM-SILICATES IN DETERGENTS—INFLUENCE ON THE AEROBIC BIOLOGICAL SEWAGE TREATMENT. W.K. Fischer, P. Gerike and G. Kurzyca (Henkel KGaA, Dusseldorf). *Tenside Deterg.* 15(2), 60-4 (1978). The effect of relevant concentrations of calcium loaded SASIL was shown on three sewage treatment plant models. Shown that SASIL improves the purification performance due to a better sludge retention.

SOME EXPERIMENTS ON DETERGENCY IN AQUEOUS AND NON-AQUEOUS MEDIA. X. INFLUENCE OF THE PH OF THE WASH LIQUOR ON THE REMOVAL AND REDEPOSITION OF PARTICULATE

SOIL. S.V. Vaeck and A. Callbaut (Centra Laundering and Drycleaning Inst., Antwerp). *Tenside Deterg.* 15(2), 83-5 (1978). Redeposition tests confirm the results obtained with deposition tests: in both cases the redeposition or the deposition of hydrophobic particulate soil decrease with increasing pH, more so with polyester cotton fabrics than with pure cotton fabrics. Complex phosphates show specific soil-suspending properties. Other removal data on other fabrics are given.

INVESTIGATIONS INTO DIFFUSION IN AQUEOUS DISPERSING AGENT SYSTEMS, USING THE PULSATION-DIFFUSION METHOD. PART 2; THE DIFFUSION OF ADDITIVE COMPONENTS IN AQUEOUS DISPERSING AGENT SOLUTIONS. F. Wolf, P. Konig and M. Khine. *Tenside Deterg.* 15(2), 65-7 (1978). The diffusion coefficients of additive components such as urea, methylene blue, methanol, KCl and sodium dodecylsulfate were determined by the pulsation-diffusion method in dispersing agent solutions, including PVA, Methocel and polyethylene oxide.

SURFACE AND MICELLAR PROPERTIES OF N,N-DI-(2-HYDROXY-PROPYL) ETHANOLAMINE SURFACTANTS. S. Kucharski (Tech. Univ. Wroclaw, Poland). *Tenside Deterg.* 15(2), 77-82 (1978). These ethanolamines were synthesized from glycidyl ethers and ethanolamine. Surface tension, wetting ability and critical micelle concentration of the amine hydrochlorides and ethoxylates were shown to relate with the number of oxypropylene units in the amine molecule. It was established that the presence of oxypropylene groups enhanced the surface activity and wetting ability of the surfactants.

METAL SALTS OF ORGANIC PHOSPHORIC ACID ESTERS—THEIR PROPERTIES EXAMINED BY A DERIVATOGRAPH. B. Lorant. *Tenside Deterg.* 15(2), 75-6 (1978). Heavy metal salts of several surface active phosphoric acid diesters were prepared and their thermal stability was determined by a Derivatograph.

SYNTHESIS AND PROPERTIES OF SURFACTANTS BASED ON CARBOHYDRATES. I. SYNTHESIS OF SOME 0-DODECYL ALDOSES. B. Havlinova, M. Kosik, P. Kovac and A. Blazej (Slovak Acad. Sci., Inst. Chem. Bratislava, Czechoslovakia). *Tenside Deterg.* 15(2), 72-4 (1978). Unequivocal syntheses and isolation in the crystalline state of three mono-0-dodecyl derivatives of aldoses substituted at different positions (HO-1, HO-3 and HO-6) are described. The correct structures were confirmed by IH-NMR and mass spectra of the intermediates in the syntheses.

RELATIONS BETWEEN CHEMICAL STRUCTURE AND SURFACE ACTIVITY. I. SYNTHESIS AND PROPERTIES OF AQUEOUS SOLUTIONS OF ACETALS FORMED FROM ALIPHATIC ALDEHYDES AND MONOALKYL ETHERS OF ETHYLENE GLYCOLS. B. Burezyk and A. Sokolowski. *Tenside Deterg.* 15(2), 68-71 (1978). Individual acetals were synthesized and their physical constants as well as surface tension, cloud point and foaming properties of aqueous solutions were determined.

METHOD FOR ANALYSIS OF TENSIDES IN WATER AND WASTE WATER WITH SPECIFIC REGARD TO CATION-ACTIVE TENSIDES. E.R. Michelsen. *Seifen, Ole, Fette, Wachse.* 104(4), 93-8 (1978). Method for determination of cation-tensides in an average microgram range by quantitative thin layer chromatography yielding a preliminary confidence level of  $\pm 0.6$  to  $\pm 1.7$  micrograms.

SODIUM-ALUMINUM-SILICATES IN THE WASHING PROCESS. PART II: CLEANSING ACTION OF NATURAL ZEOLITES. H.G. Smolka and M.J. Schwuger (Henkel & Cie GmbH, Dusseldorf). *Colloid Polym. Sci.* 256(3), 270-7 (1978). The following factors are decisive for the application of natural zeolites: Particle size, ion-exchange capacity and kinetics, purity, suitable particle sizes ( $< 50 \mu$ ) to avoid deposition on textiles and parts of washing machines. Effect of Na-forms, impurities of heavy metals on certain detergent ingredients, and minimum concentration of iron ions are recorded.