Aus der Größe der Körner und ihrer Kapazität berechnet sich für die an der Oberfläche sulfonierte Schicht eine Dicke von etwa 90—100 Å. Im übrigen sind die Eigenschaften des oberflächlich sulfonierten Austauschers denen eines handelsüblichen Austauschers ähnlich.

Literatur

1. Boyd, G. E., A. W. Adamson, and L. S. Meyers, Jr.: J. Am. Chem. Soc. **69**, 2836 (1947).
2. —, and B. A. Soldano: J. Am. Chem. Soc. **75**, 6091 (1953).
3. Ceserano, C., u. G. Pagnetti: Comit. Naz. Energia Nucl. RT/CH **63**, 4 (1963).
4. D'Alelio, G. F.: Kunststoffpraktikum, S. 85. München: C. Hansen 1952.
5. Helferich, F.: Ionenaustauscher, Bd. I, S. 243. Weinheim/Bergstr.: Verlag Chemie 1959.
6. Lieser, K. H., u. K. Bächmann: diese Z. **225**, 379 (1967).
7. Pepper, K. W.: J. Appl. Chem. **1**, 124 (1951).
8. Sugai, S., and J. Furuidu: J. Chem. Phys. **23**, 1181 (1955).

Prof. Dr. K. H. Lieser
Lehrstuhl für Kernchemie, Eduard Zintl-Institut
der Technischen Hochschule
D-6100 Darmstadt

Kurze Mitteilungen

Radiochemical Separation of Thorium-234 on Zeokarb-225 Exchange Resin Using m-Nitrobenzoic Acid as Eluting Agent

Radiochemische Abtrennung von Thorium-234 an dem Ionenaustauscher Zeokarb-225 mit m-Nitrobenzoesäure als Eluierungsmittel

S. Sethi and R. S. Rai

Inst. of Techn. and Science, Pilani, India

Received December 8, 1969

It has been found earlier that thorium forms a complex with m-nitrobenzoic acid (m-NBA) in the ratio 1:4 [1—3]. This fact has now been utilized for an ion-exchange separation of thorium using Zeokarb-225 resin.

Experimental. A slurry of 0.6 g Zeokarb-225 (0.2—0.4 mesh) in water was transferred to a micro ion-exchange column (10×1 cm), and suction was applied, so that resin particles settled down to form a compact column. The resin column was washed with HCl and finally with water to remove excess of acid.

A millimolar solution of thorium nitrate containing ^{234}Th (activity about 3500 cpm) was dropped over the resin column at room temperature and at a rate of 1 drop per 7 sec. The effluent did not contain any activity. Thus, complete exchange had taken place.

For elution 20 ml of freshly prepared saturated solution of m-NBA was filled in the reservoir and drops coming out were collected on aluminium planchets. The planchets were dried, 2 drops of vinyl acetate in acetone (3 g/100 ml) were dropped over each sample on the planchets and the activity was counted by a Geiger counting system type GCS 10A (Trombay Electronic Instruments). Plotting the activity versus drops of the effluent yielded a typical elution curve as usually obtained in ion-exchange chromatography.

Aqueous m-NBA solution could elute only 0.3% of the activity; if, however, a *saturated solution in benzene* was employed the activity was completely removed from the resin.

References

1. Crepaz, E., Marchesini, L.: Atti Ist. Veneto Sci., Classe Sci. Mat. Nat. **110**, 91 (1952).
2. Harvey, B. G., Heal, H. G., Maddock, A. G., Rowley, E. L.: J. Chem. Soc. **1947**, 1010.
3. Kolb, A., Ahrle, C.: Z. Angew. Chem. **18**, 92 (1905).

Suman Sethi
Dr. Rama Shanker Rai
Department of Chemistry, University of Rajasthan
Jaipur-4 (Rajasthan), India

Verbesserte Mikroborbestimmung im Picogramm-Bereich bei Gegenwart der Eisenmetalle

Improved Microdetermination of Boron in the Picogram Range in Presence of the Iron Metals

F. Umland und A. Janssen

Anorgan.-Chem. Institut der Universität Münster i. W.

Eingegangen am 8. Dezember 1969

Zur photometrischen Bestimmung sehr kleiner Mengen Bor eignet sich besonders die Überführung in den Borcurcuminkomplex (BCK) [2,4]. Zur Spurenbestimmung im Nanogramm-Bereich mit der Bestimmungsgrenze von 8 ng/10 ml (Grenzkonzentra-