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50X1-HUM

SECRET

BIBLIOGRAPHY OF MATERIALS PUBLISHED IN THE USSR ON LITHIUM

I. Periodical Abstracts

Source	PA Number
1. On the Dielectric Permeability of Alkali-haloid Crystals, G. J. Skavani, Zhur Eksper i Teor Fiz XVII, 5, 1947.	
2. Width of the Lines of Lithium 4132 A and the Concentration of Electrons in the Plasma of the Arc Discharge, V. I. Damlova, DAN SSSR, Ser Fiz, XI, 3, 1947.	
3. Solid Solutions of Lithium and Lead, S. A. Pogodin and Ye. S. Shpichinetskiy, Izvest Sektora Fiz-Khim Analiza, XV, Sept 1947.	
4. Ternary Alloys of Lead with Sodium and Lithium, Ye. S. Shpichinetskiy, Izvest Sektora Fiz-Khim Analiza, XV, Sept. 1947.	
5. Negative Ions of Alkali Metals in Gas Discharges Occurring in Vapors of Alkali-Haloid Salts, V. M. Dukel'skiy, E. Ya. Landberg, N. I. Ionov, DAN SSSR, LXII, 3.	
6. Method of Quantitative Spectroscopic Indentification of Lithium in the Soil, T. F. Borovik-Romanova, Zhur Anal Khim, III 6, 1948.	
7. Ternary Reciprocal Systems of Fluorides and Chlorides of Lithium and Calcium, G. A. Bukhalova and A. G. Bergman, DAN SSSR, LXVI, 1, 1949.	
8. The Helium Content of Beryllium, Boron, and Lithium Minerals, V. G. Khlopin, DAN SSSR, LXVI, 5, 1949.	

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Source

1. Ternary System, Aluminum-Magnesium Lithium. Part II: Diagrams Showing Composition of Subsidiary Cross Section.

2. The Nature of the Bond and the Dipole Moment of the LiH Molecule, M. N. Adamov, ZFK, XXIII, 10, 1172-76, 1949.

III. Miscellaneous Abstracts

Source	Abstract
1. Minerals and Rocks of the Region Between Nedvedice-and Rosna, Josef Sekanina, Sbornik Klubu Prirod. v Brne, XXVI, 99-113, 1946.	Axinite from metamorphic rocks, and lepidolite and tourmaline from pagmatite are described. The Li minerals occur in a pegmatite that cuts on older vein of pegmatite and aplite. Partial mixing of both pegmatites appears to have taken place at the borders.
2. The Width of the Lithium Line at 4132 A. and the Electron Concentration in the Arc Discharge, V. I. Danilova, (Sibirian Phys. Tech. Inst. Tomsk Univ.). Bull. Acad. Sci. URSS, Ser. Phys., XI, 252-9, 1947. (Same as Item 1, 7)	A d.-c. arc was struck between C electrodes. A channel in the electrodes was filled with a mixt. contg. 10% Li_2CO_3 with variable amts. of Na_2CO_3, K_2CO_3, and $ZnSO_4$. It was found that the width of the 4132 A. line is linearly dependent on the concrn. of K and Na and independent of the Zn concn. This is due to a change in the diam. of the arc and therefore to a change in c.d. and electron concn. Zn does not increase the diam. because of its high ionization potential. Variation of c.d. at const. concn. of salts changes the diam. of the arc for Zn and does not affect the diam. in arcs contg. Na and K. The width of the line is linearly proportional to the c.d. The temp. of the pos. electrode was detd. to be 5480°K. by the relative intensities of the lines Cu 5153 A. On assuming that the widening of the line is due to collisions with electrons the electron concn. calcd. from the equation of Unsold (Z. Astrophysik 12, 56(1936) is substantiated by expt.

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3. Electrode Potentials in Anhydrous Formic Acid, V. A. Pleskov (Karpov Inst. Phys. Chemistry, Moscow, Acta Physicochim, URSS, XXI, 41-54, 1946, in English, J. Phys. Chem. USSR, XX, 153-62, 1946.

The reversible electrode potentials of Rb, Cs, Na, K, Li, Ca, Zn, Cd, H_2, Pb, Cu, Ag, and Hg in anhydl formic acid at 25° were measured.

4. Effect of Solutions of Sodium Chloride, Potassium Chloride, Hydrochloric Acid, and Acetic Acid on the Intensity Of the Lithium Line, S. A. Borovik and M. G. Brazhnikova, Trav. Lab. Biogeochem. Acad. Sci., URSS, VII, 109-10, 1944.

Results show that (1) in all cases, the intensity of the Li line is arugmented, (2) the increase ismore pronounced in the more concd. solns., and (3) NaCl and KCl augment the intensity more strongly than deHCl and CH_3COOH. This permits detection of Li at concns. which could not be detected in aq. solns.; as little as 0.00025% Li can be detected in presence of KCl or NaCl.

5. Physicochemical Investigation of Alloys of Al with Zn and Li, T. A. Badaeva and P. Ya. Sal'dau, J. Gen. Chem., USSR, XIII, 643-60, 1943.

By thermal analysis and examn. of microstructure the liquidus surface of the system Al-Zn-Li was constructed. Phases in equil. with solid soln. of Al at room temp.are: -solid soln. of Zn, phases (of variable compn.) and formed by a peritectic reaction, and -solid soln. of the compd. AlLi. By tempering and the study of micro-structure the limits of -solid soln. were detd. under various temps.

6. Polarographic Determination of Sodium and Lithium in Natural Waters, A. A. Reznikov and A. S. Starik-Smagina, Trudy Vsesoyuz, Konferentsii Anal. Khim, II, 559-72, 1943.

The object of the expts. was to det. (1) Na in the presence of K, (2) Li in the presence of Na and K, (3) Na and Li in the presence of all substances ordinarily present in natural waters, and (4) Na and Li in natural waters of various compns. and degrees of mineralization.

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