The Problem of Hardening Chloromagnesia Cements SOV/80-32-3-7/43

There are 2 tables, 4 graphs and 6 Soviet references.

SUBMITTED: May 3, 1957

Card 2/2

5(2) SOV/80-32-4-3/47

AUTHORS: Vyrodov, I.P., Bergman, A.G.

TITLE: The Problem of Hardening of Magnesia Cements (K voprosu o tverdenii magnezial'nykh tsementov)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 716-723 (USSR)

ABSTRACT: The article is a continuation of the work published in Nr 1 and Nr 3 of this journal. Cements with $MgO:MgCl_2$ ratios of 1:1, 2:1, 3:1, 5:1, 7:1 were tested. The thermograms of the samples are shown in Figures 1 and 2. The endothermal effects are shifted to higher temperatures if the ratio is increased. The bottom deposits show no endothermal effects (Figures 3 and 4). In the roentgenograms of the samples the lines indicating $Mg(OH)_2$ were absent. This is explained by the deviation of the oxychlorides formed during hardening from the stoichiometric relation due to defects in the crystal lattice. The positions of the OH^- and Cl^- ions are not differentiated. The syngony of the decomposition product of the oxychlorides rises from hexagonal to tetragonal. During the hardening of the cement magnesium hydroxide is absent as intermediate phase.

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SOV/80-32-4-3/47

The Problem of Hardening of Magnesia Cements

The cements form non-stoichiometric oxychloride hydrates. The least deviation from stoichiometric composition is observed in samples with a vapor pressure between 1.6 and 14.5 mm Hg. The oxychloride has the formula $3MgO \cdot MgCl_2 \cdot 10H_2O$. There are 6 graphs, 2 tables, and 13 references, 9 of which are Soviet, 2 English, 1 Swiss, and 1 Japanese.

SUBMITTED: February 24, 1958

Card 2/2

OSICHKINA, R.G.; KUZNETSOVA, A.I.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.1: Survey of studies made of the salt deposits of southern Tajikistan. Trudy AN Tadzh. SSR 84:137-145 '59. (MIRA 13:3)
(Tajikistan--Salt)

OSICHKINA, R.G.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.2: The problem of exploiting the salt domes of southeastern Tajikistan. Trudy AN Tadsh. SSR 84:147-151 '59. (MIRA 13:3)
(Tajikistan--Salt)

OSICHKINA, R.G.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.3: Salt deposits of the Kulyab group. Trudy AN Tadzh. SSR 84:153-170 '59.
(MIRA 13:3)

(Kulyab Province--Salt)

OSICHKINA, R.G.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.4: Salt deposits of the Tairsu-Kyzylsu interfluve and deposits in the vicinity of the Vakhsh River. Trudy AN Tadsh. SSR 84:171-185 '59.
(MIRA 13:3)

(Tairsu Valley--Salt) (Kyzylsu Valley--Salt) (Vakhsh Valley--Salt)

KUZNETSOVA, A.I.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.5: Classification of natural salt waters. Trudy AN Tadzh. SSR 84:187-193 '59.
(MIRA 13:3)

(Tajikistan--Salt)

KUZNETSOVA, A.I.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.6: Salt deposits of the Kafirnigan River basin. Trudy AN Tadsh. SSR 84:195-212 '59. (MIRA 13:3)

(Kafirnigan Valley--Salt)

KUZNETSOVA, A.I.; BERGMAN, A.G.

Salt deposits of southern Tajikistan. Report No.7: Salt deposits of the Vakhsh-Yavan group and the salt lakes of the Dahilikul'-Nizhne-Pyandzh group. Trudy AN Tadzh. SSR 84:213-223 '59.
(MIRA 13:3)

(Tajikistan--Salt)

5(2,4)

AUTHORS: Akopov, Ye. K., Bergman, A. G. SOV/20-127-3-19/71

TITLE: Complex Formation and Phase Transformations in a Quaternary Reciprocal System of Chlorides and Sulphates of Lithium, Sodium and Potassium

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 3, pp 549-552 (USSR)

ABSTRACT: It proved that the complex formation between salts is much richer and more manifold in meltings than it is in the aqueous solutions of the same salts. The latter fact is due to a considerable hydration of the salts which, in many cases, is stronger than the complex formation (figure 1 shows the meltability diagram of the complex mentioned in the title). Only one compound of the Na and K sulphates (frequently found in deposits of potassium sulphate) could be found: Na, $K_3(SO_4)_2$ called glaserite. If water is absent, there exists also a compound which develops during the decomposition of solid solutions of the mentioned elements at temperatures below 476°.

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These solid solutions, however, decompose in the ternary system of Li, Na, K||SO_4 at a temperature reduced to 784-816°, and form 3 compounds. Neither was it possible to find their exact composition or to prove the identity of a compound with one of them (stable below 476°). The decomposition temperature of these solid solutions is, however, reduced by the presence of the chlorides of the same elements. The thermodynamic conditions are of greatest importance for the complex formation, especially in the presence of other components in the liquid phase. All this proves the great importance of medium and solvent for the complex formation. The investigation of meltings of the systems mentioned in the title (Fig 1)(Refs 1-9) proved 17 complex compounds. Five of them are double salts. The different phases are graphically represented in the areas of a trihedral prism (Fig 2). Three phases develop [I], [II], [III] in the decomposition of solid solutions of the sulphates of Na and K. The investigation of the meltings of this quaternary system (Fig 1) showed an extraordinary complexity

of the components which is similar to silicates and borates. Figure 2 shows that sulphates of Li and Na form 2 compounds while their chlorides form only one single compound. There exist also 2 compounds among the corresponding sulphides. In the system Li, Na, K $\| SO_4$ there exist 5 inner phases: [IV], [V], [VI], [VII], and [VIII] which are three-fold sulphates. More than 8,000 points of the crystallizing temperatures were determined for the complete investigation of the meltability diagram of the system under discussion. On the basis of these data, complete investigations of the melting diagrams of 24 cross sections (triangular and square) through the prism were carried out. Figure 3 shows the mentioned diagram of a vertical section, while figure 4 shows a horizontal one. By means of these cross sections 4 phases could be found: [IX], [X], [XI], and [XII]. All of them are quaternary hetero-ionic compounds. There are 4 figures, 1 table, and 9 Soviet references.

Complex Formation and Phase Transformations in a Quaternary Reciprocal System of Chlorides and Sulphates of Lithium, Sodium and Potassium SOV/20-127-3-19/71

ASSOCIATION: Kubanskiy sel'skokhozyaystvennyy institut (Kuban' Agricultural Institute). Rostovskiy inzhenerno-stroitel'nyy institut (Rostov Civil Engineering Institute)

PRESENTED: March 25, 1959, by S. I. Vol'fkovich, Academician

SUBMITTED: March 25, 1959

Card 4/4

IL'YASOV, I.I.; BERGMAN, A.G.; CHAURSKIY, N.I.

System Cu, Cd, Pb || Cl. Zhur. neorg. khim. 10 no.5:1256-1258 My '65. (MIRA 18:6)

BERGMAN, A.G.; MISIER, Zh.V.

System consisting of potassium cadmium and lead chlorides.
Zhur. neorg. khim. 10 no.5:1282-1285 My '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya pri Severo-Kavkazskom sovete narodnogo khozyaystva.

GORYACHEVA, V.P.; BERGMAN, A.G.

Horizontal cross section of the system Li, Na, K || F, P_2O_7.
Zhur. neorg. khim. 10 no.7:1744-1746 Jl '65.
(MIRA 18:8)

AUTHORS: Shul'ga, N. A., Bergman, A. G.

S/078/60/005/03/025/048
B004/B015

TITLE: The Meltability in the System of Fluorides and Silicates of Sodium and Potassium

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 3, pp 649-653 (USSR)

ABSTRACT: The system Na, K ‖ F, SiO_3 was investigated by the visual-polythermal method. The authors mention the binary component systems (Fig 1, Table 1) that have already been investigated by other scientists: Na_2F_2 - K_2F_2 (Ref 10), K_2F_2 - K_2SiO_3 (Ref 7), Na_2F_2 - Na_2SiO_3 (Ref 4), and K_2SiO_3 - Na_2SiO_3 (Ref 3). The authors repeated the investigation of the last-mentioned binary systems which led to some corrections: 20 sections were examined in the system Na, K ‖ F, SiO_3 (Table 2, Figs 2-4). The crystallization surface consists of the six crystallization zones of the four components and the two complex salts $Na_2SiO_3 \cdot 3K_2SiO_3$, and $2Na_2SiO_3 \cdot 3K_2SiO_3$. The system is classified as a nondiagonal, semireversible, reciprocal system. The crystallization zones meet in

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The Meltability in the System of Fluorides and Silicates of Sodium and Potassium

S/078/60/005/03/025/048
B004/B015

a ternary transition point (646°) and three eutectic points (628, 628, and 626°). The system is similar to Na, K ‖ F, TiO_3.

The authors point out the advantages of the visual-polythermal method in the investigation of silicate-containing systems. There are 4 figures, 2 tables, and 13 references, 10 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu inzhenerno-stroitel'nyy institut (Rostov-na-Donu Institute of Construction Engineers)

SUBMITTED: November 26, 1958

Card 2/2

S/078/60/005/05/24/037
B004/B016

AUTHORS: Dionis'yev, S. D., Il'yasov, I. I., Bergman, A. G.

TITLE: The Melting-point Diagram in the Ternary System of Potassium-, Thallium-, and Lead Bromide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 5, pp. 1135 - 1138

TEXT: After giving a short survey of the binary systems K_2Br_2 - Tl_2Br_2, K_2Br_2 - $PbBr_2$, and Tl_2Br_2 - $PbBr_2$, and referring to the papers by A.P.Rostkovskiy (Ref. 2), and L. I. Pavorskiy (Ref. 5), the authors report on their investigation of 14 sections (Tables 1,2, Fig. 1) of the ternary system. The resultant melting-point diagram is shown in Fig. 2, the crystallization scheme in Fig. 3. The melting-point diagram has a complicated structure owing to the formation of limited solid solutions between KBr and TlBr and stable, continuous, solid solutions between $TlBr.2PbBr_2$ and $KBr.2PbBr_2$. The phase diagram is divided into 5 phase triangles with 3 invariant points (Table 3). There are 3 figures, 3 tables, and 6 references, 5 of which are Soviet.

Card 1/2

The Melting-point Diagram in the Ternary System of Potassium-, Thallium-, and Lead Bromide

S/078/60/005/05/24/037
B004/B016

SUBMITTED: February 10, 1959

Card 2/2

KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system of lithium and potassium chlorides and tungstates.
Zhur. neorg. khim. 5 no.11:2499-2502 N '60. (MIRA 13:11)
(Lithium chloride) (Potassium chloride)
(Lithium tungstate) (Potassium tungstate)

BAKUMSKAYA, Ye.L.; KEROPYAN, V.V.; BERGMAN, A.G.

Ternary system formed by sodium, thallium, and lead sulfates.
Zhur. neorg. khim. 6 no.7:1652-1655 Jl '61. (MIRA 14:7)
(Sodium sulfate) (Thallium sulfate) (Lead sulfate)

IL'YASOV, I.I.; BERGMAN, A.G.

Physicochemical analysis of systems containing salts of organic acids. Part 3: Reciprocal system consisting of potassium and sodium bromides and acetates. Zhur. ob. khim. 31 no.2:368-370 F '61. (MIRA 14:2)

(Systems (Chemistry))

IL'YASOV, I.I.; SHCHEMELEVA, G.G.; BERGMAN, A.G.

Fusibility of a ternary system of sodium, potassium, and thallium iodides. Zhur. neorg. khim. 6 no.3:699-701 Mr '61. (MIRA 14:3)

1. Rostovskiy-na-Donu filial Vsesoyuznogo zaochnogo instituta pishchevoy promyshlennosti.
(Sodium iodide) (Potassium iodide)(Thallium iodide)

GORYACHEVA, V.P.; BERGMAN, A.G.

Reciprocal system consisting of sodium and calcium chlorides and pyrophosphates. Zhur.neorg.khim. 6 no.6:1385-1388 Je '61. (MIRA 14:11)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Systems (Chemistry))

IL'YASOV, I.I.; DIONIS'YEV, S.D.; BERGMAN, A.G.

Fusibility diagram of the ternary system consisting of sodium, thallium, and lead bromides. Zhur.neorg.khim. 6 no.6:1389-1391 Je '61. (MIRA 14:11)

1. Rostovskiy-na-Donu filial Vsesoyuznogo zaochnogo instituta pishchevoy promyshlennosti.
(Systems (Chemistry)) (Bromides)

KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system consisting of lithium and potassium chromates and tungstates. Zhur.neorg.khim. 6 no.9:2132-2135 S '61. (MIRA 14:9)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Systems (Chemistry)) (Alkali metal chromates)
(Alkali metal tungstates)

IL'YASOV, I.I.; BERGMAN, A.G.

Interaction in the ternary systems consisting of cadmium and lead chlorides, bromides, and iodides. Zhur.neorg.khim. 6 no.9: 2142-2147 S '61. (MIRA 14:9)

1. Rostovskiy-na-Donu filial zaochnogo instituta sovetskoy torgovli.

(Systems (Chemistry)) (Halides)

BUKHALOVA, G.A.; BEREZHNAYA, V.T.; BERGMAN, A.G.

Ternary systems consisting of calcium, barium, and alkali metal fluorides. Zhur.neorg.khim. 6 no.10:2359-2363 O '61. (MIRA 14:9)

1. Rostovskiy inzhenerno-stroitel'nyy institut.
(Systems (Chemistry))

BERGMAN, A.G.; NOGOYEV, K.

Interaction of urea with sodium and potassium halides and nitrates. Report No.1: Ternary systems consisting of urea - potassium nitrate and potassium halides. Izv.AN Kir.SSR.Ser. est.i tekh.nauk 4 no.9:149-154 '62. (MIRA 16:4)
(Urea) (Potassium nitrate) (Potassium halides)

BERGMAN, A.G.; NOGOYEV, K.

Fusibility curve of the ternary system consisting of lithium, potassium, and ammonium nitrates. Zhur.neorg.khim. 7 no.2:351-355 F '62. (MIRA 15:3)

1. Rostovskiy inzhenerno-stroitel'nyy institut.
(Alkali metal nitrates) (Systems (Chemistry)) (Melting points)

IL'YASOV, I.I.; BERGMAN, A.G.

Fusibility curve of the ternary system consisting of cadmium, sodium, and lead chlorides. Zhur.neorg.khim. 7 no.2:356-359 F '62. (MIRA 15:3)
(Chlorides) (Melting points) (Systems (Chemistry))

IL'YASOV, I.I.; CHAURSKIY, N.I.; BERGMAN, A.G.; DIONIS'YEV, S.D.

Melting diagram of the reciprocal system consisting of sodium and cadmium bromides and iodides. Zhur.neorg.khim. 7 no.3:618-620 Mr '62. (MIRA 15:3)
(Halides) (Systems (Chemistry))

BERGMAN, A.G.; BAKUMSKAYA, Ye.L.; KEROPYAN, V.V.

Ternary system of lithium, sodium, and lead sulfates. Zhur.neorg. khim. 7 no.3:621-624 Mr '62. (MIRA 15:3)
(Sulfates) (Systems (Chemistry))

IL'YASOV, I.I.; DIONIS'YEV, S.D.; BERGMAN, A.G.

Melting diagram of the ternary reciprocal system of cadmium and thallium bromides and iodides. Zhur.neorg.khim. 7 no.3:625-627 Mr '62. (MIRA 15:3)
(Halides) (Systems (Chemistry))

BERGMAN, A.G.; GORYACHEVA, V.P.

Reciprocal system of sodium and calcium pyrophosphates and sulfates.
Zhur.neorg.khim. 7 no.3:628-632 Mr '62. (MIRA 15:3)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Pyrophosphates) (Sulfates) (Systems (Chemistry))

24869
S/078/62/007/003/016/019
B110/B138

11.4100

AUTHORS: Il'yasov, I. I., Bergman, A. G.

TITLE: Fusibility of ternary systems of sodium, potassium, and cesium chlorides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 3, 1962, 695 - 696

TEXT: According to its position in the periodic system the properties and salt structure of cesium differ more widely from those of sodium than potassium (to whose subgroup it belongs). The great difference in ionic radii (K = 1.33 Å, Cs = 1.65 Å), does not, however, prevent the formation of continuous solid solutions. The authors used their own visual-polythermal method (Zh. obshch. khimii, 26, 981 (1956)). Data are expressed in moles per cent. As to the NaCl-CsCl binary systems, the authors' data on the eutectic at 34% NaCl and 493°C coincide with those of S. F. Zhemchuzhnyy, F. Rambakh (ZhRFKhO, 41, 1785 (1909)), but the fusibility curves are somewhat more curved. In CsCl-KCl, a continuous series of solid solutions was found with a minimum at 606°C and 36% KCl. As to NaCl-KCl, A. G. Bergman and N. M. Selivanova (Izv. Sektora fiz.-khim.

Card 1/2

Fusibility of ternary systems...

analiza, 11, 225 (1938)) show that a continuous series of solid solutions is formed with a minimum at 658°C and 47.5% KCl. They dissociate when cooled below 500°C. Six internal sections were examined in the ternary system Na, K, Cs || Cl. Section III, and particularly VI, clearly showed that the KCl-CsCl solid solutions, dissociate when NaCl is introduced due to the great difference between the ionic radii of K and Cs within the system. Hence, the curve of combined crystallization of the CsCl and KCl solid solutions, which are mutually restricted, appears quite distinctly. NaCl and KCl solid solutions dissociate also within the system beginning near 536°C and below. As a result, three monovariant curves of the combined crystallization of two phases converge, at the ternary eutectic point, at 480°C, and the composition 45.5% CsCl, 30% NaCl and 24.5% KCl. The isotherms in the system were passed through 50°C. If the dissociation curves of solid solutions are continued to the appropriate sides, the composition area of the system triangle is divided into three fields of crystallization: NaCl = 36.4%; KCl = 46%; CsCl = 17.5%. [Abstracter's note: Essentially complete translation.] There are 2 figures, 1 table, and 3 Soviet references.

SUBMITTED: September 25, 1961

Card 2/3

GORYACHEVA, V.P.; BERGMAN, A.G.

Reciprocal system of lithium and potassium chlorides and pyrophosphates. Zhur.neorg.khim. 7 no.5:1141-1145 My '62. (MIRA 15:7)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Alkali metal chlorides)
(Alkali metal pyrophosphates)

BERGMAN, A.G.; MASLENNIKOVA, G.N.

Nondiagonal irreversible-reciprocal system consisting of cesium and lead chlorides and sulfates. Zhur.neorg.khim. 7 no.6:1382-1386 Je '62. (MIRA 15:6)

(Systems (Chemistry)) (Fused salts)

IL'YASOV, I.I.; BERGMAN, A.G.

Melting diagram of the reciprocal system consisting of potassium and cadmium chlorides and bromides. Zhur. neorg. khim. 7 no.8:1970-1973 Ag '62. (MIRA 16:6)

(Systems(Chemistry))

GALUSHKINA, R.A.; BERGMAN, A.G.

Polythermal diagram of the system K_2SO_4-KNO_3-H_2O. Zhur.neorg.khim. 7 no.9:2251-2253 S '62. (MIRA 15:9)
(Potassium sulfate) (Potassium nitrate)
(Thermal analysis)

ARABADZHAN, A.S.; BERGMAN, A.G.

Interaction of lithium and sodium chlorides and bromides in melts. Zhur.neorg.khim. 7 no.9:2226-2229 S '62. (MIRA 15:9)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Alkali metal halides) (Systems (Chemistry))

BERGMAN, A.G.; GORYACHEVA, V.P.

Diagonal cross section of the quaternary reciprocal system consisting of lithium, sodium, and potassium pyrophosphates and flourides. Zhur.neorg.khim. 7 no.10:2438-2443 O '62.
(MIRA 15:10)

1. Kubanskiy sel'skokhozyaystvenny institut.
(Alkali metal pyrophosphates) (Alkali metal fluorides)

BERGMAN, A.G.; GORYACHEVA, V.P.

Ternary system consisting of lithium, sodium, and potassium pyrophosphates. Zhur.neorg.khim. 7 no.10:2444-2446 O '62.
(MIRA 15:10)

1. Kubanskiy sel'skokhozyaystvennyy institut i Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Alkali metal pyrophosphates)

BERGMAN, A.G.; OCHERETNYY, V.A.

Involutes of representations of a stable complex of the reciprocal system consisting of nine salts. Zhur.neorg.khim. 7 no.10:2466-2474 O '62. (MIRA 15:10)

1. Krasnodarskiy filial Vsesoyuznogo zaochnogo inzhenerno-stroitel'nogo instituta.
(Systems (Chemistry))

BERGMAN, A.G.; GORYACHEVA, V.P.

Melting diagram of the system consisting of lithium and potassium pyrophosphates and sodium fluoride. Zhur.neorg.khim. 7 no.11:2617-2618 N '62. (MIRA 15:12)

1. Kubanskiy sel'skokhozyaystvennyy institut i Rostovskiy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Alkali metal pyrophosphates)
(Sodium fluoride)

S/078/62/007/006/013/024
B106/B180

AUTHORS: Bergman, A. G., Goryacheva, V. P.

TITLE: Constitution diagram of the reversible and reciprocal system of the fluorides and pyrophosphates of lithium and potassium

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 6, 1962, 1394-1398

TEXT: Continuing a series of papers on reciprocal systems consisting of fluorides, chlorides, and pyrophosphates of alkali and alkaline earth metals the crystallization surface of the ternary reversible and reciprocal system Li, K ‖ F, P_2O_7 was studied by a visual polythermal method. Data on the binary systems Li_4F_4-K_4F_4, Li_4F_4-$Li_4P_2O_7$, K_4F_4-$K_4P_2O_7$ and $Li_4P_2O_7$-$K_4P_2O_7$ were taken from publications; the authors of the present paper analyzed the unstable diagonal section K_4F_4-$Li_4P_2O_7$ and

Constitution diagram of...

11 sections. The crystallization surface of the ternary system studied consists of 5 main fields of crystallization. The field of the incongruently melting compound $3K_4F_4 \cdot K_4P_2O_7$ is displaced when lithium salts are introduced at 692°C and 42.5% $K_4P_2O_7$, 42.5% K_4F_4, 15% Li_4F_4. The compound does not take part in the phase complexes of the reciprocal system. The fundamental ternary invariant points of the system are a eutectic (477°B; 12.5% $K_4P_2O_7$, 48% Li_4F_4, 39.5% K_4F_4), and a ternary transition point (553°C; 48.5% Li_4F_4, 43% $K_4P_2O_7$, 8.5% K_4F_4). The more stable and triangulating diagonal of the system is Li_4F_4-$K_4P_2O_7$; it divides the constitution diagram of the system into the two phase triangles $Li_4P_2O_7$-Li_4F_4-$K_4P_2O_7$ and Li_4F_4-$K_4P_2O_7$-K_4F_4. The $K_4P_2O_7$ field penetrates deep into the system (up to a fluoride content of 87.5%). Areas covered by the crystallization fields: $Li_4P_2O_7$ 37.91%, $K_4P_2O_7$ 29.46%, Li_4F_4 17.10%, K_4F_4 13.31%, field of the complex 2.22%. For comparison, it must be noted that the triangulating diagonal in the system Li, Na \\ F, P_2O_7 is

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S/078/62/007/006/013/024
B106/B180

Constitution diagram of...

Na_4F_4-$Li_4P_2O_7$. There are 3 figures and 1 table.

ASSOCIATION: Kubanskiy sel'skokhozyaystvennyy institut (Kuban' Institute of Agriculture)

SUBMITTED: June 24, 1961

Card 3/3

BERGMAN, A.G.

Modernization of machine-tool clamps. Stan.i instr. 33 no.6: 40 Je '62. (MIRA 15:7)
(Machine tools--Technological innovations)

BERGMAN, A.G.; MISLER, Zh.V.

Ternary system consisting of lithium, potassium, and cadmium chlorides. Zhur.neorg.khim. 8 no.2:403-406 F. '63. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya pri sovete narodnogo khozyaystva Rostovskogo ekonomicheskogo rayona.
(Cadmium chloride) (Lithium chloride) (Potassium chloride)

S/078/63/008/003/015/020
B117/B186

AUTHORS: Bergman, A. G., Andryushchenko, Yu. I.

TITLE: Melting-point diagram of the reciprocal system of chlorides and bromides of lithium and lead

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 3, 1963, 712-714

TEXT: Continuing the study of the quaternary reciprocal system Li, Pb, K || Cl, Br, the melting-point diagram for the system Li, Pb || Cl, Br was studied by the visual-polythermal method. The crystallization surface of the system investigated consists of two fields: the crystallization field (87%) of solid solutions of $Li_2(Cl,Br)_2$, and that (13%) of solid solutions of $Pb(Cl,Br)_2$. The two fields intersect on a common crystallization curve which descends steadily from the eutectic point at 406°C on the Li_2Cl_2 - $PbCl_2$ side to 322°C on the Li_2Br_2 - $PbBr_2$ side. The isotherms lying above 25°C showed a distinct ridge along the stabler diagonal of Li_2Cl_2 - $PbBr_2$ on the crystallization surface of the solid

Card 1/2

S/078/63/008/003/015/020
B117/B186

Melting-point diagram of the ...

solutions of $Li_2(Cl,Br)_2$. This ridge is largest for the 500°C isotherm. The position of the minimum at 522°C on the Li_2Cl_2 - Li_2Br_2 curve, indicates that the solid solutions of $Li_2(Cl,Br)_2$ do not decompose between 522 and 340°C. There are 3 figures.

ASSOCIATION: Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya (Rostov-na-Donu Scientific Research Institute of Machine Technology)

SUBMITTED: March 30, 1962

Card 2/2

BERGMAN, A.G.; SADOVSKIY, A.P.; MISLER, Zh.V.

Ternary system of lead, lithium, and cadmium chlorides. Zhur.-neorg.khim. 8 no.4:954-958 Ap '63. (MIRA 16:3)
(Lead chloride) (Lithium chloride) (Cadmium chloride)

BERGMAN, A.G.; ARABADZHAN, A.S.

Melting diagram of the ternary system Li || F, Cl, Br. Zhur.-neorg.khim. 8 no.5:1228-1229 My '63. (MIRA 16:5)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Lithium halides) (Melting points)

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of lithium and thallium. Zhur. neorg. khim. 8 no.6:1453-1454 Je '63. (MIRA 16:6)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Systems(Chemistry)) (Fused salts)

BERGMAN, A.G.; KAZNACHEYEVA, K.F.; GORYACHEVA, V.P.; SADOVSKIY, A.P.

Reciprocal system consisting of pyrophosphates and fluorides of sodium and potassium. Zhur. neorg. khim. 8 no.6:1455-1460 Je '63. (MIRA 16:6)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya i Kubanskiy sel'skokhozyaystvennyy institut.

(Alkali metal fluorides)
(Alkali metal pyrophosphates)

BERGMAN, A.G.; ANDRYUSHCHENKO, Yu.I.; BINEYEVA, R.K.

Fusibility in the ternary system consisting of chlorides of lithium, potassium, lead. Zhur. neorg. khim. 8 no.7:1693-1697 Jl '63. (MIRA 16:7)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Alkali metal chlorides) (Lead chlorides)
(Fused salts)

BERGMAN, A.G.; ANDRYASHCHENKO, Yu.I.

Ternary system consisting of bromides of potassium, lithium, and lead. Zhur. neorg. khim. 8 no.7:1698-1701 Jl '63. (MIRA 16:7)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.
(Alkali metal bromides) (Lead bromides)

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of lithium and sodium. Zhur. neorg. khim. 8 no.8:1928-1932 Ag '63. (MIRA 16:8)

(Alkali metal halides) (Systems (Chemistry))

S/079/63/033/001/002/023
D205/D307

AUTHORS: Il'yasov, I. I., Palobekov, A. G. and Bergman, A. G.

TITLE: Interactions in the ternary system urea-phenol-benzoic acid

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 19-22

TEXT: The present work was undertaken in an effort to study systematically the interactions of urea with organic compounds. Pure materials and visual-polythermal methods were used. Melting point measurements in the binary systems phenol-urea (I), phenol-benzoic acid (II), and urea-benzoic acid (III) showed the existence of: I - a eutectic at 35°C and 6.5 mol% urea, and a transition point at 60.6°C and 33.0% $CO(NH)_2$, corresponding to a compound $CO(NH_2)_2 \cdot 2C_6H_5OH$; II - a eutectic at 28°C and 14% C_6H_5COOH; III - a congruent melting compound $3CO(NH_2)_2 \cdot C_6H_5COOH$, separating from the liquid phase at 110°C, and 2 eutectic points at 75.5°C/49.5% urea

Card 1/2

and at 10^{8}C/76.5% urea. In the ternary system, 12 sections were studied, finding that the phase diagram is divided into 3 sections by the lines C_6H_5COOH-$CO(NH_2)_2 \cdot 2C_6H_5OH$ and $CO(NH_2)_2 \cdot 2C_6H_5OH$ - $3CO(NH_2)_2 \cdot C_6H_5COOH$. The region of existence of $3CO(NH_2)_2 \cdot C_6H_5COOH$ extends far into the phase diagram. There was a ternary eutectic at 18°C, corresponding to 12.5 benzoic acid - 7.5 urea - 80 phenol, and 2 transition points: at 35°C (25.0 benzoic acid - 17.0 urea - 58.0 phenol), and 41°C (26.5 benzoic acid - 34.5 urea - 39.0 phenol). The low melting mixtures were highly viscous, suggesting further complexing in the liquid phase. There are 3 figures and 2 tables.

ASSOCIATION: Rostovskiy-na-Donu filial instituta sovetskoy torgovli (Rostov-on-Don Branch of the Institute of Soviet Commerce)

SUBMITTED: March 2, 1962

PALOBEKOV, A.G.; IL'YASOV, I.I.; BERGMAN, A.G.

Melting diagram of the ternary system urea - β-naphthol-cinnamic acid. Zhur. ob.khim. 34 no. 5:1375-1379 My '64. (MIRA 17:7)

1. Rostovskiy-na-Donu filial zaochnogo instituta sovetskoy torgovli.

BAKUMSKAYA, Ye.L.; BERGMAN, A.G.; KEROPYAN, V.V.

System consisting of the sulfates of potassium, thallium, and lead.
Zhur. neorg. khim. 8 no.12:2748-2750 D '63. (MIRA 17:9)

IL'YASOV, I.I.; BERGMAN, A.G.

Ternary reciprocal systems of the halides of sodium, potassium, and cadmium. Zhur. neorg. khim. 9 no.6: 1416-1422 Je '63 (MIRA 17:8)

1. Rostovskiy filial zaochnego instituta sovetskoy torgovli.

BERGMAN, A.G.; NOGOYEV, K.

Systems $CO(NH_2)_2$-Li 3;Li,Na, '3 and Na,K,NH_4 '3.

Zhur. neorg. khim. 9 no.6:1423-1426 Je '63 (MIRA 17:8)

1. Rostovskiy inzhenerno-stroitel'nyy institut i institut fizicheskoy i neorganicheskoy khimii AN Kirgizskoy SSR.

BERGMAN, A.G.; SHUL'GA, N.A.

Interaction of urea with the nitrates of lithium, sodium, potassium, and barium. Zhur. neorg. khim. 9 no.5:1218-1220 My '64. (MIRA 17:9)

1. Rostovskiy-na-Donu inzhenerno-stroitel'nyy institut.

BERGMAN, A.G.; ANDFYUSHCHENKO, Yu.I.

System Li, K, Pb// Cl, Br. Zhur. neorg. khim. 9 no.5:1221-1228 My '64. (MIRA 17:9)

BERGMAN, A.G.; KOZACHENKO, Ye.L.; BEREZINA, S.I.

System consisting of Li, Na // F, Cl. Zhur. neorg. khim. 9 no.5:1214-1217 My '64. (MIRA 17:9)

ARABADZHAN, A.S.; BERGMAN, A.G.

Reciprocal system consisting of the chlorides and bromides of silver and thallium. Zhur. neorg. khim. 9 no.7:1769-1771 Jl '64. (MIRA 17:9)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

BERGMAN, A.G.; MISIER, Zh.V.

System consisting of lithium and potassium chlorides and [illegible] chromate. Zhur. neorg. khim. 9 no.8:1955-1959 Ag '64.
(MIRA 17:11)

BERGMAN, A.G.; BOGATOVA, Ye.I.

System consisting of lithium and sodium pyrophosphates and molybdates. Zhur. neorg. khim. 9 no.9:2182-2188 S '64.

System consisting of lithium and sodium pyrophosphates and molybdates. Ibid.:2189-2195

(MIRA 17:11)

1. Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya i Krasnodarskiy filial Vsesoyuznogo zaochnogo inzhenerno-stroitel'nogo instituta (VZISI).

IL'YASOV, I.I.; PALOBEKOV, A.G.; BERGMAN, A.G.

Melting diagram of the ternary system urea-phenol-resorcinol. Zhur. ob.khim. 34 no.7:2099-2103 Jl '64 (MIRA 17:8)

1. Rostovskiy-na-Donu filial Zaochnogo instituta sovetskoy torgovli.

PALOBEKOV, A.G.; IL'YASOV, I.I.; BERGMAN, A.G.

Melting diagram of the ternary system urea - resorcinol - β-naphthol. Zhur. ob. khim. 34 no.10:3143-3146 O '64. (MIRA 17:11)

1. Rostovskiy-na-Donu filial Zaochnogo instituta sovetskoy torgovli.

BERGMAN, A.G.; NOGOYEV, K.

Reaction of urea with sodium and potassium halides. Report No.2. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 5 no.4:59-67 '63.

Reaction of urea with sodium and potassium halides. Report No.3. (69-77) (MIRA 16:10)

NOGOYEV, K.; BERGMAN, A.G.

Interaction in the ternary systems of urea and ammonium nitrate with sodium and potassium nitrates. Zhur. prikl. khim. 36 no.8:1680-1686 Ag '63. (MIRA 16:11)

BERGMAN, A.G.; NOGOYEV, K.

Interaction of urea with sodium and potassium nitrates. Zhur. prikl. khim. 36 no.8:1864-1867 Ag '63. (MIRA 16:11)

GALUSHKINA, R.A.; BERGMAN, A.G.

Polytherm of the ternary system $H_2O - K_2SO_4 - NH_4NO_3$.
Zhur. neorg. khim. 8 no.11:2573-2576 N '63.
(MIRA 17:1)

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of lithium and silver. Zhur.neorg.khim. 8 no.9:2148-2150 S '63.
(MIRA 16:10)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

IL'YASOV, I.I.; DIONIS'YEV, S.D.; BERGMAN, A.G.

Reciprocal system consisting of bromides and iodides of potassium and lead. Zhur. neorg. khim. 9 no.2:422-424 F'64. (MIRA 17:2)

ARABADZHAN, A.S.; BERGMAN, A.G.

Quaternary reciprocal system consisting of chlorides and bromides of lithium, sodium, and potassium. Zhur. neorg. khim. 9 no.2: 425-431 F'64. (MIRA 17:2)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

IL'YASOV, I.I.; BERGMAN, A.G.

System consisting of chlorides and bromides of sodium and cadmium.
Zhur.neorg.khim. 9 no.4:949-951 Ap '64. (MIRA 17:4)

1. Rostovskiy filial zaochnogo instituta Sovetskoy torgovli.

BOGATOVA, Ye.I.; KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system consisting of lithium and potassium pyrophosphates and molybdates. Zhur. neorg. khim. 9 no.11: 2623-2630 N '64 (MIRA 18:1)

IL'YASOV, I.I.; PALOBEKOV, A.G.; BERGMAN, A.G.

Melting diagram of the ternary system urea - phenol - cinnamic acid. Zhur.ob.khim. 34 no.2:367-370 F '64.

Melting diagram of the ternary system urea - phenol - β-naphthol. Ibid.:370-373

Melting diagram of the ternary system urea - naphthalene - β-naphthol. Ibid.:374-376 (MIRA 17:3)

1. Rostovskiy-na-Donu filial Zaochnogo instituta sovetskoy torgovli.

ZEMLYANOV, G. Ye.; BERGMAN, A.G.

Melting diagram of monoethanolamine with organic compounds.
Zhur. ob. khim. 34 no.11:3536-3540 N '64 (MIRA 18:1)

1. Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya.

IL'YASOV, I.I.; PALOBEKOV, A.G.; BERGMAN, A.G.

Interaction in the ternary system urea-hydroquinone-resorcinol.
Zhur. ob. khim. 35 no.4:602-606 Ap '65.
(MIRA 18:5)

PALOBEKOV, A.G.; BERGMAN, A.G.

Melting diagram of the ternary system urea - α-naphthol - β-naphthol. Zhur. ob. khim. 35 no.5:765-768 My '65.
(MIRA 18:6)

1. Rostovskiy-na-Donu filial zaochnogo instituta sovetskoy torgovli.

PALOHEKOV, A.G.; BERGMAN, A.G.

Melting diagram of the ternary system urea - phenol - α-naphthol. Zhur. ob. khim. 35 no.6:942-945 Je '65.

Urea distribution between hydroquinone and β-naphthol in the ternary system urea - hydroquinone - β-naphthol. Ibid.:945-949 (MIRA 18:6)

1. Rostovskiy-na-Donu filial zaochnogo instituta sovetskoy torgovli.

ANDRYUSHCHENKO, Yu.I.; BERGMAN, A.G.

Electroconductivity in the system Li, K, Pb // Zhur. fiz. khim. 39 no.3:672-677 Mr '65. (MIRA 18:7)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

ZIMINA, T.D.; BERGMAN, A.G.; NAGORNYY, G.I.

Reciprocal system consisting of chlorides and sulfates of sodium, calcium, and barium. Zhur. neorg. khim. 10 no.9:2145-2151 S '65.
(MIRA 18:10)

1. Irkutskiy gosudarstvennyy universitet i Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya.

IL'YASOV, I.L.; BERGMAN, A.G.

Continuous solid solutions and their decomposition on the melting diagram of a reciprocal system consisting of potassium and cesium chlorides and iodides. Ukr. khim. zhur. 31 no.8: 772-775 '65. (MIRA 18:9)

1. Zaochnyy institut sovetskoy torgovli, Rostovskiy filial.

FINKEL'SHTEYN, N.A.; BERGMAN, A.G.; NAGORNYY, G.I.

Interaction between potassium, calcium, and barium sulfates. Zhur.neorg.khim. 10 no.8:1890-1894 Ag '65.

Interaction between fused chlorides and sulfates of potassium, calcium, and barium. Ibid.:1895-1900.

(MIRA 18:1)

1. Irkutskiy gosudarstvennyy universitet i Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya. Submitted July 4, 1964.

ZIMINA, T.D.; BERGMAN, A.G.; NAGORODNYY, G.I.

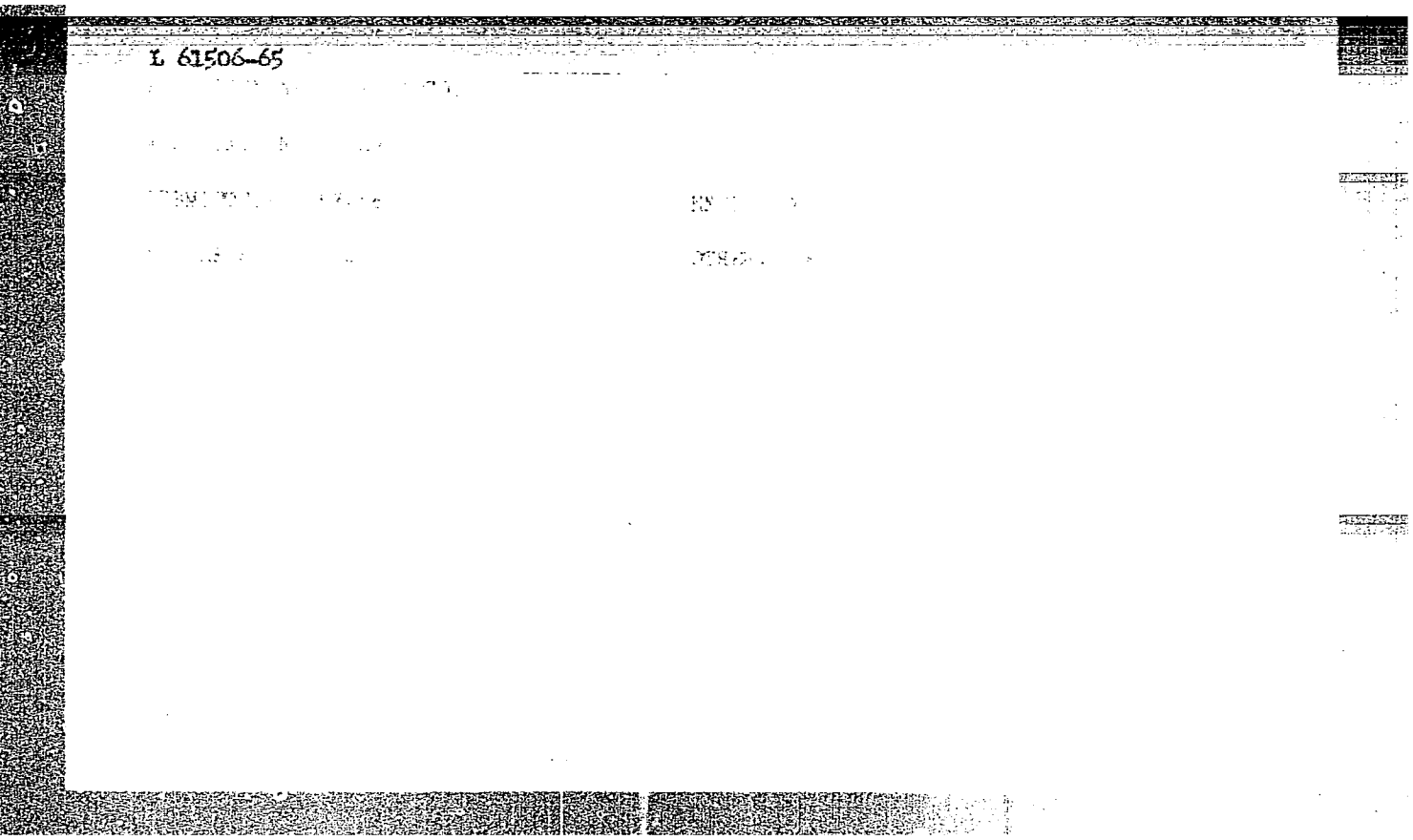
Diagonal sections of the quaternary reciprocal system consisting of sodium, calcium, and barium chlorides and sulfates. Ukr. khim. zhur. 31 no.10:1035-1040 '65. (MIRA 19:1)

1. Irkutskiy gosudarstvennyy universitet i Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya. Submitted May 23, 1964.

TOPIC TAGS: urea, resorcinol, hydroquinone, eutectic poin

ABSTRACT: The paper is an extension of the work of A. [illegible]

[illegible] tion areas belonging to the three components and two compounds in [illegible]



BERGMAN, A. G.

Fusion diagram of the system KF-NaF-MgF$_2$. Bergman and E. P. Dergunov, *Compt. rend. acad. sci. U.R.S.S.* 48, 329–31(1945).—The KF-NaF-MgF$_2$ system studied is one of the 4 triple systems forming the faces of the compn. tetrahedron of a quadruple system of Li, K, Na, and Mg fluorides, which is being investigated primarily to find *fluoride fluxes for the refining of nonferrous metals and their alloys*. The compds. in the KF-NaF-MgF$_2$ system det. the nature of the quadruple system as a whole, as the fourth component, LiF, does not form any addnl. compds. and serves only as a solvent. The method used was the visual-polythermal method, where the temps. at which the first crystals appear and the last disappear are detd. by means of a Pt/Pt,Rh thermocouple. The formation of 3 compds.—2KF.MgF$_2$, KF.MgF$_2$, and NaF.MgF$_2$—divides the compn. triangle into 4 simple systems. The resulting 3 eutectics correspond to the following temps. and compn. (in mol. %): eutectic (1) at 976°—53.5% MgF$_2$ (I), 33.0% NaF (II), and 13.5% KF (III); eutectic (2) at 708°—22.5% I, 62.5% II, and 15.0% III; and eutectic (3) at 685°—6.5% I, 34.5% II, and 59.0% III. The transition triple point occurs at 710° and has the following compn.: 11.0% I, 39.0% II, and 50.0% III.

Frank Gonet

BELGIUM #5

61-9, Ceramics, Refractories

Straight-fired tunnel kiln for open-firing of sanitary ware. A. S. Berggau and A. M. Barenbaum (*Stek. Keram. Prom.*, 1947, No. 9, 10; *Brit. ceram. Abstr.*, 1947, 184A).—The kiln was constructed on the basis of an analysis of physico-chemical processes during firing, conditions of heat transfer and movement of gas currents, and of experimental work. Hydraulically-propelled cars are used, and the temp. is stabilised by doors which lock when the cars enter the kiln. Ware is placed on the cars in single layers. Flameless gas burners are used in the firing and heating zones. The burning gases are led into the channel underneath the cars to avoid damage to the ware. Air in the cooling zone is circulated to create a pressure sufficient to prevent hot gases from the firing zone passing into the cooling zone.

R. H. CLARKE.

BERGMAN, G.

Ice - Northern Hemisphere

"Ice atlas of the northern hemisphere" (in English). Hydrographic Office of the United States Navy. Reviewed by G. Bregman. Met. i gidrol. no. 6, 1947.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.