К (книги / обзорам)

19992 (NP-12689) ENGINEERING PROPERTIES OF POTASSIUM. Quarterly Report No. 9, October 1–December 31, 1962. Alexis W. Lemmon, Jr. (Battelle Memorial Inst., Columbus, Ohio). Jan. 30, 1963. Contract NAS-5-584. 14p.

Measurements of the viscosity, vapor pressure, and enthalpy of liquid K were concluded. Thermal conductivity and electrical resistivity was measured up to about 800°C; the apparatus is being modified so that measurements can be continued up to 1150°C as planned. The P-V-T equipment is being calibrated and checked; measurements should be completed in about another month. The design study of equipment for the direct determination of the specific heat of K vapor was concluded. A decision was reached that the most favorable method for measuring the thermal conductivity of K vapor is a dynamic method in which a barewire probe is used; apparatus design is continuing. Final equations for the enthalpy and specific heat of solid and liquid K as well as a value for the heat of fusion (14.30 cal/g) are reported. The equations are H_t (solid) = $0.1705\,t + 0.2095 \times 10^{-3}\,t^2$ (0 to 63.2°C),

1963

$\Delta H_{fus.}$ =

559,13

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H_t (liquid) = 13.453 + 0.20070 t − 0.45421 × 10^{-4} t^2 + 0.38019 × 10^{-7} t^3 (63.2 to 1150°C), C_s (solid) = 0.1705 + 0.4190 × 10^{-3} t (0 to 63.2°C), C_s (liquid) = 0.2004 − 0.8777 × 10^{-4} t + 1.0970 × 10^{-7} t^2 (63.2 to 1150°C). Enthalpies and specific heats show excellent agreement with work of previous investigators below 800°C. Thermal conductivity and electrical resistivity of liquid K were measured to about 800°C, and tentative values were previously reported. Modification of the heat sink of the apparatus to permit measurements to 1150°C is now being made. Since the failure previously reported, parts of the vapor viscometer were reconstructed. The last of four tests designed to determine the adequacy of the furnace atmosphere were successful, and K was charged to the boiler to begin operation. Activity during the quarter on the vapor compressibility (P-V-T) apparatus was that of assembly, testing, and calibration. It was determined that the dynamic probe method offers the best possibility for the accurate measurement of the thermal conductivity of K vapor. Data on electrical conductivity of the vapor indicate that it is much lower than expected, and thus a bare wire probe may be satisfactory. Design of apparatus is continuing. (auth)

K

Cp

30÷1150°C

Lemmon A.W. et al. 1963

BNL, report 756, (1963).
ORNL, report 3605, (1964).

[Метод смешения.
Калориметр Бунзена]

1963

Engineering properties of potassium. A. W. Lemmon, Jr., H. W. Deem, E. A. Eldridge, E. H. Hall, J. Matolich, Jr., and J. F. Walling (Battelle Mem. Inst., Columbus, Ohio). *U.S. At. Energy Comm.* BATT-4673-FINAL, 85 pp.(1963). Many of the thermodynamic and transport properties of K, both liquid and vapor, were measured for temps. to 2100°F. Exptl. values for vapor pressure; sp. heat, thermal cond., and viscosity of liquid;--and pressure-vol.-temp. characteristics were obtained. Exptl. techniques for the direct measurement of the sp. heat of K vapor and for the measurement of its viscosity and thermal cond. were also explored and developed. The latent heat of vaporization, and enthalpy, entropy, and sp. heat of K vapor were computed from some of the data obtained. From *Nucl. Sci. Abstr.* 18(12), Abstr. No. 19926(1964). TCNG

S 298.1 Стивенсон Д.Т. 1940

Stevenson D.P.

К-соедин. J. Chem. Phys. 8, 898

Замечание об энтропии газообр. двухатомных иодидов и галогенидов.

К+ ВР-VI-1668 1952

(Ср) Мищенко К.П., Пономарева А.М., Ж. физ. хим. 1952, 26, 998-1006

К

„Натрий и калий" 1959

(под ред. А.Ф. Алабышева)

1961

Ackermann R.J., Thorn R.J.,
Progr. Ceram. Soc., 1961, 1, 50-51

K

20018 THERMODYNAMIC AND TRANSPORT PROPERTIES OF POTASSIUM. A. W. Lemmon, Jr., H. W. Deem, E. H. Hall, and J. R. Walling (Battelle Memorial Inst., Columbus, Ohio). New York, American Inst. of Chemical Engineers, 1963, Preprint 41b, 26p, $0.50. (CONF-473-1) .

From American Institute of Chemical Engineers 56th Annual Meeting, Houston, Oct. 1963.

Reliable values for many of the basic thermodynamic and transport properties of K were measured or derived. The work led to the development of some new experimental techniques, but also pointed out the extreme difficulties that can be encountered when work at such high temperatures is necessary. Data are reported for enthalpy of the solid and liquid K, vapor pressure, P-V-T characteristics, liquid viscosity, and liquid thermal conductivity. Computed results for the specific heats, enthalpy, and entropy are also reported. (P.C.H.)

1963

NSA 1964 18 N12

К
(книга)

1963

16 В1 К. Новое руководство по неорганической химии. Том 2. Разд. 2. Калий. Nouveau traité de chimie minérale. Sous la direct. Pascal Paul. T. 2. Fasc. 2. Chrétien A., Lang J., Pascal P., Rollet A.-P. Potassium. Paris, Masson et Cie, 1963, XXXIX, 762 p., ill. (франц.)

К

1973

обзор

Malloy Rhona J.
" Comprehens Inorg. Chem. Vol. III.
Oxford e.a., 1973, 339-529.

(см. Na, обзор, I)

К обзор 1972

Fromageau R.

т.д. св-ва Моногр. Mel. Haute Purete
1972, 1, 39-103 (Fr)

(см Li ; I)