

Table I. Calcination Products
Calcination time, 16 hours

Temp., °C.	Compounds Identified				
	$\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O} \cdot 2\text{Cr}_2\text{O}_3$	$\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O} \cdot \text{Cr}_2\text{O}_3$	$\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O} \cdot 2\text{Cr}_2\text{O}_3$	$\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O} \cdot \text{Cr}_2\text{O}_3$	$\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ $1\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O} \cdot 2\text{Cr}_2\text{O}_3$
260	Cr_2O_3^a Cr_2O_3 $\text{CuO}^?$	Cr_2O_3 , hexagonal CuO	?	Cr_2O_3 , hexagonal ZnO ?	ZnO CuO ?
480	CuCr_2O_4 (50%) ^b Cr_2O_3 , hexagonal (25%) CuO (25%)	Cr_2O_3 , hexagonal (45%) CuO (45%) CuCr_2O_4 (10%)	ZnCr_2O_4 (95%) Cr_2O_3 , hexagonal ZnO	ZnCr_2O_4 (40%) ZnO (30%) Cr_2O_3 , hexagonal (30%)	ZnCr_2O_4 CuCr_2O_4 CuO ZnO
650	CuCr_2O_4 (70%) Cr_2O_3 , hexagonal (15%) CuO (15%)	Cr_2O_3 , hexagonal (35%) CuO (35%) CuCr_2O_4 (30%)	ZnCr_2O_4 (97%) Cr_2O_3 , hexagonal ZnO	ZnCr_2O_4 (85%) Cr_2O_3 , hexagonal ZnO	ZnCr_2O_4 CuO ZnO CuCr_2O_4
870	CuCr_2O_4 (> 90%) Cr_2O_3 , hexagonal CuO , weak $\text{Cu}_2\text{Cr}_2\text{O}_4$, weak	CuCr_2O_4 (70%) Cr_2O_3 , hexagonal CuO $\text{Cu}_2\text{Cr}_2\text{O}_4$	ZnCr_2O_4	ZnCr_2O_4 (> 90%) Cr_2O_3 , hexagonal ZnO	ZnCr_2O_4 CuO ZnO
1200	$\text{Cu}_2\text{Cr}_2\text{O}_4$ Cr_2O_3 , hexagonal CuCr_2O_4 (> 5%)	$\text{Cu}_2\text{Cr}_2\text{O}_4$ Cr_2O_3 , hexagonal CuCr_2O_4 (> 5%)	ZnCr_2O_4	ZnCr_2O_4 (> 90%) Cr_2O_3 , hexagonal ZnO	ZnCr_2O_4 CuO

^aThe compounds are listed in the order of their concentration as per x-ray diffraction. ^bPercentage of constituent as per x-ray diffraction.

quently enhanced when one of the reactants is undergoing decomposition.

The conversion of cupric chromite to cuprous chromite is demonstrated at 870° and 1200°C. in the copper series. Zinc chromite formation is complete at 870°C. in the chromium trioxide mixture.

Except for the cupric nitrate trihydrate—chromium(ic) oxide series—there are unexplained peaks in the x-ray diffraction patterns of the samples calcined at 260°C. These unexplained peaks may be associated with either unknown chromium-oxygen compounds or unknown reaction products.

The affinity of zinc as compared with copper for chromite formation is demonstrated in the study of the mixture consisting of 1 mole of cupric nitrate trihydrate, 1 mole of zinc nitrate hexahydrate, and 2 moles of chromium trioxide. This affinity of zinc over copper is most likely related

to relative ionization potentials, 9.36 volts for zinc and 7.71 volts for copper (2).

LITERATURE CITED

- (1) American Society of Testing Materials, X-ray Powder Data Cards, 5-0661, 5-0664, 5-0657, 5-0668, 1-1123, 2-1403, 9-47, 6-0504, and 7-267, Philadelphia, 1963.
- (2) Gould, E.S., "Inorganic Reactions and Structure," pp. 492-5, Holt, Rinehart & Winston, New York, 1962.
- (3) Keely, W.M., Mathes, W.B., J. CHEM. ENG. DATA 10, 231 (1965).
- (4) Keely, W.M., Maynor, H.W., *Ibid.*, 9, 170 (1964).
- (5) Mellor, J.W., "Comprehensive Treatise on Inorganic and Theoretical Chemistry," Vol. XI, pp. 197-200, Longmans, Green, New York, 1931.
- (6) Pattison, J.N., Keely, W.M., Maynor, H.W., J. CHEM. ENG. DATA 5, 433 (1960).

RECEIVED for review January 19, 1966. Accepted June 6, 1966.

CORRECTION

In the article "High Temperature PVT Properties of Sodium, Potassium, and Cesium" [J. CHEM. ENG. DATA 11, 309 (1966)] in Table I, Experiment 17, the second temperature should be 2516.1 (not 2416.1); in Table II, Experiment 8, the 12th figure for specific volume should be 5.1371 (not 5.1293); in Table III, Experiment 35, the fourth temperature should be 2492.6 (not 2492.0) and the corresponding pressure should be 311.00 (not 211.00). The subcaption of Figure 6 should read: ■ Tepper; ● this work. In the first reference of Literature Cited the page number should be 315.

In the article "High Temperature Vapor Pressures of Sodium, Potassium, and Cesium" [J. CHEM. ENG. DATA 11, 315 (1966)] on page 320, next to the last line in the second paragraph, first column, delete "with the contact." In reference 10 the volume number should be 11.

In the article "High Temperature Specific Volumes of Liquid Sodium, Potassium, and Cesium" [J. CHEM. ENG. DATA 11, 320 (1966)] reference 9 should read: J. CHEM. ENG. DATA 11, 309 (1966). Reference 10 should read: *Ibid.*, p. 315.

CORRECTION

In the article "Isobaric Vapor-Liquid Equilibrium of *n*-Heptane-*n*-Butanol System" [J. CHEM. ENG. DATA 11, 147 (1966)], the following corrections should be made:

$$\text{Equation 1 should be } \gamma_i = \frac{y_i P}{x_i P_i^0} - \theta_i$$

The caption for Figure 3 should read, α_1 vs. composition. Page 148, first column, line 13 should read, α_1 , are calculated from experimental data with the help of. Page 148, second column, line 3 should read, measurement of temperature, $E(T)$; pressure, $E(P)$; and. Page 149, first column, line 21 should read, $D - J = 4.75 < 10$. Page 149, second column, line 10 should read, $\alpha_1 =$ dimensionless thermodynamic function in Equations 5 and 7.