COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Barium methanoate (barium formate); $(CHO_2)_2Ba$; [541-43-5] (2) Potassium methanoate (potassium formate); $(CHO_2)_2K_2$; [590-29-4]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

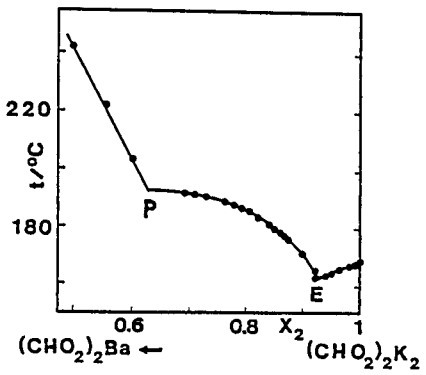
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 162.6 °C and x_1= 0.074 (authors).
Peritectic, P, at 192.2 °C and x_1= 0.373 (authors).

Note - The investigation was limited to $x_1 \leq 0.50$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2)$~ 169 °C (442 K) agrees satisfactorily with the value $T_{fus}(2)$= 441.9±0.5 K reported in Table 1 of the Preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richest in component 2 proves poor miscibility of the solid components in this region is reasonable. No assumption is made by the authors about the nature of the peritectic equilibrium.

SOURCE AND PURITY OF MATERIALS:

Component 1: K&K material of stated purity ≥ 99 %.

Component 2: C. Erba RP material of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Barium methanoate (barium formate); $(CHO_2)_2Ba$; [541-43-5] (2) Sodium methanoate (sodium formate); $(CHO_2)_2Na_2$; [141-53-7]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

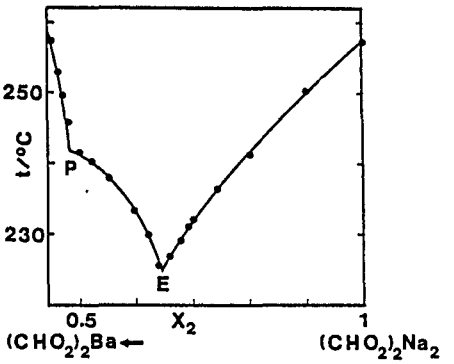
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 224.8 °C and x_1= 0.354 (authors).
Peritectic, P, at 242.0 °C and x_1= 0.518 (authors).

Note - The investigation was limited to $x_1 \leq 0.55$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2)$~ 258 °C (531 K) agrees satisfactorily with the value $T_{fus}(2)$= 530.7±0.5 K reported in Table 1 of the Preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richest in component 2 proves poor miscibility of the solid components in this region is reasonable. No assumption is made by the authors about the nature of the peritectic equilibrium.

SOURCE AND PURITY OF MATERIALS:

Component 1: K&K material of stated purity ≥ 99 %.

Component 2: C. Erba RP material of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Barium methanoate (barium formate); $(CHO_2)_2Ba$; [541-43-5] (2) Thallium(I) methanoate (thallous formate); $(CHO_2)_2Tl_2$; [992-98-3]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. **Can. J. Chem.** 1972, 50, 1972-1975.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

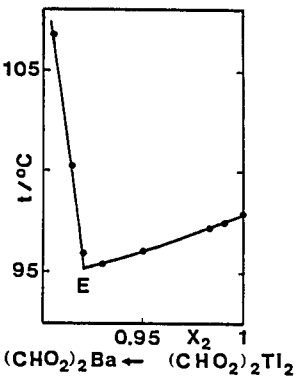
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 95.4 °C and x_1 = 0.079 (authors).

Note - The investigation was limited to $x_1 \leq 0.09$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2) \sim 101$ °C (374 K) coincides with the values determined with DSC by Braghetti et al. (Ref. 2), and with DTA by Meisel et al. (Ref. 3), although being 3 K lower than that obtained with hot-stage polarizing microscopy by Baum et al. (Ref. 4).

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

SOURCE AND PURITY OF MATERIALS:

Component 1: K&K material of stated purity ≥ 99 %.
Component 2: BDH material of stated purity ≥ 99 %.

REFERENCES:

(1) Braghetti, M.; Leonesi, D.; Franzosini, P.
Ric. Sci. 1968, 38, 116-118.
(2) Braghetti, M.; Berchiesi, G.; Franzosini, P.
Ric. Sci. 1969, 39, 576-584.
(3) Meisel, T.; Seybold, K.; Halmos, Z.; Roth, J.; Melykuti, C.
J. Thermal Anal. 1976, 10, 419-431.
(4) Baum, E.; Demus, D.; Sackmann, H.
Wiss. Z. Univ. Halle 1970, 19, 37-46.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Calcium methanoate (calcium formate); $(CHO_2)_2Ca$; [544-17-2] (2) Potassium methanoate (potassium formate); $(CHO_2)_2K_2$; [590-29-4]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

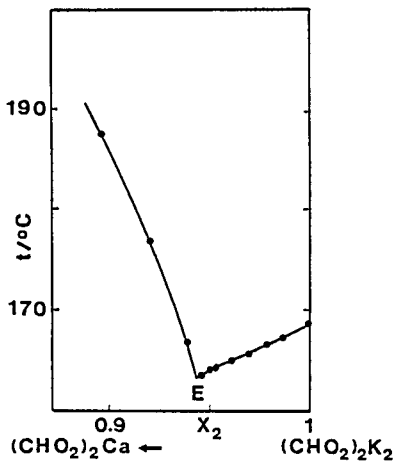
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 163.2 °C and x_1= 0.057 (authors).

Note - The investigation was limited to $x_1 \leq 0.11$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2)$~ 169 °C (442 K) agrees satisfactorily with the value $T_{fus}(2)$= 441.9±0.5 K reported in Table 1 of the Preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richer in component 2 proves poor miscibility of the solid components in this region is reasonable.

SOURCE AND PURITY OF MATERIALS:

C. Erba RP materials of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Calcium methanoate (calcium formate); $(CHO_2)_2Ca$; [544-17-2] (2) Sodium methanoate (sodium formate); $(CHO_2)_2Na_2$; [141-53-7]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

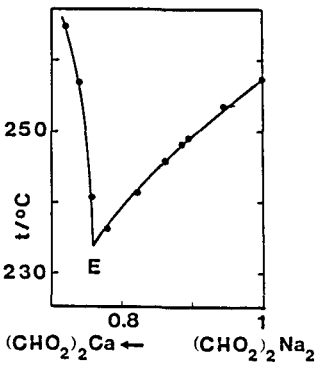
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 233.4 °C and x_1= 0.243 (authors).

Note - The investigation was limited to $x_1 \leq 0.27$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2) \sim$ 258 °C (531 K) agrees satisfactorily with the value $T_{fus}(2)$= 530.7±0.5 K reported in Table 1 of the preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richer in component 2 proves poor miscibility of the solid components in this region is reasonable.

SOURCE AND PURITY OF MATERIALS:

C. Erba RP materials of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Calcium methanoate (calcium formate); $(CHO_2)_2Ca$; [544-17-2] (2) Thallium(I) methanoate (thallous formate); $(CHO_2)_2Tl_2$; [992-98-3]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. **Can. J. Chem.** 1972, 50, 1972-1975.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

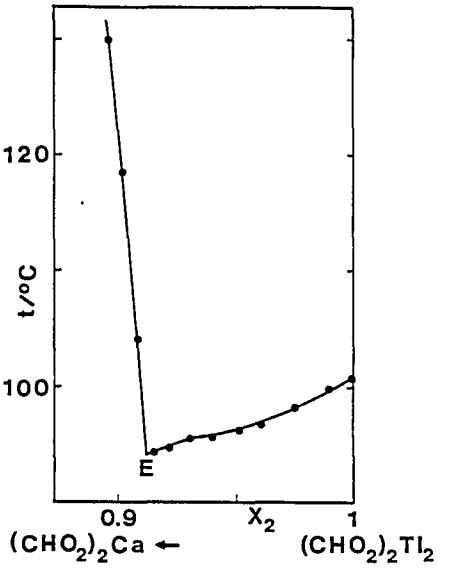
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 94.2 °C and x_1 = 0.088 (authors).

Note - The investigation was limited to $x_1 \leq 0.11$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2) \sim 101$ °C (374 K) coincides with the values determined with DSC by Braghetti et al. (Ref. 2), and with DTA by Meisel et al. (Ref. 3), although being 3 K lower than that obtained with hot-stage polarizing microscopy by Baum et al. (Ref. 4).

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

SOURCE AND PURITY OF MATERIALS:

Component 1: C. Erba RP material of stated purity ≥ 99 %.
Component 2: BDH material of stated purity ≥ 99 %.

REFERENCES:

(1) Braghetti, M.; Leonesi, D.; Franzosini, P. **Ric. Sci.** 1968, 38, 116-118.
(2) Braghetti, M.; Berchiesi, G.; Franzosini, P. **Ric. Sci.** 1969, 39, 576-584.
(3) Meisel, T.; Seybold, K.; Halmos, Z.; Roth, J.; Melykuti, C. **J. Thermal Anal.** 1976, 10, 419-431.
(4) Baum, E.; Demus, D.; Sackmann, H. **Wiss. Z. Univ. Halle** 1970, 19, 37-46.

COMPONENTS:	EVALUATOR:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Lithium methanoate (lithium formate); $(CHO_2)Li$; [556-63-8]	Franzosini, P., Dipartimento di Chimica Fisica, Universita' di Pavia (ITALY).

CRITICAL EVALUATION:

This system was studied by Sokolov and Tsindrik (Ref. 1) as a side of the reciprocal ternary K, Li/CHO_2, NO_3, and by Pochtakova (Ref. 2) as a side of the ternary CHO_2/K, Li, Na. In both cases, the visual polythermal analysis was employed, and the investigation was restricted to the liquidus.

The obtained results, i.e., formation of a 1:1 congruently melting intermediate compound giving a eutectic with either component, are qualitatively similar. It is, however, to be remarked that no explanation is offered by Pochtakova (Ref. 2, where Ref. 1 is quoted) for the considerable difference between the temperature she found (427 K) for the eutectic at $100x_1$ about 40, and that (413 K) measured previously by Sokolov and Tsindrik (Ref. 1).

The fusion temperatures of the pure components reported in both Ref. 1 and Ref. 2, i.e., $T_{fus}(1)$= 440 K, $T_{fus}(2)$= 546 K, are in fair agreement with those listed in Table 1 of the Preface (441.9±0.5 K, 546±1 K). On the contrary, poor correspondence exists between solid state transition temperatures quoted in Ref. 1 from Ref. 3 (i.e., 333, 408, and 430 K for component 1; 360, 388, and 505 for component 2) and those listed in Table 1 of the Preface (418±1 K for component 1, and 496±2 K for component 2).

REFERENCES:

(1) Sokolov, N.M.; Tsindrik, N.M.
Zh. Neorg. Khim. 1969, **14**, 584-590 (*); **Russ. J. Inorg. Chem. (Engl. Transl.)** 1969, **14**, 302-306.
(2) Pochtakova, E.I.
Zh. Neorg. Khim. 1980, **25**, 1147-1150; **Russ. J. Inorg. Chem. (Engl. Transl.)** 1980, **25**, 637-639 (*).
(3) Sokolov, N.M.
Tezisy Dokl. X Nauch. Konf. S.M.I. 1956.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Lithium methanoate (lithium formate); $(CHO_2)Li$; [556-63-8]	Sokolov, N.M.; Tsindrik, N.M. **Zh. Neorg. Khim.** 1969, 14, 584-590 (*); **Russ. J. Inorg. Chem. (Engl. Transl.)** 1969, 14, 302-306.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

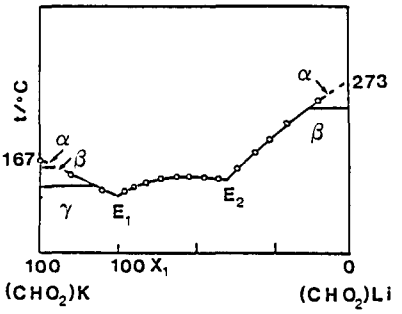
The results are reported only in graphical form (see figure).

Characteristic point(s):

Eutectic, E_1, at 118 °C and $100x_1$= 75 (authors).
Eutectic, E_2, at 140 °C and $100x_1$= 39.5 (authors).

Intermediate compound(s):

$(CHO_2)_2KLi$ (probable composition), congruently melting (authors).



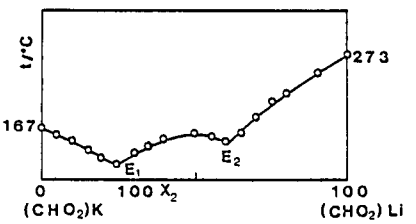
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Visual polythermal method.	Commercial materials recrystallized. Component 1 undergoes phase transitions at $t_{trs}(1)/°C$= 60, 135, 157 (Ref. 1) and melts at $t_{fus}(1)/°C$= 167. Component 2 undergoes phase transitions at $t_{trs}(2)/°C$= 87, 115, 232 and melts at $t_{fus}(2)/°C$= 273.
	ESTIMATED ERROR: Temperature: accuracy probably ±2 K (compiler).
	REFERENCES: (1) Sokolov, N.M. **Tezisy Dokl. X Nauch. Konf. S.M.I.** 1956.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Lithium methanoate (lithium formate); $(CHO_2)Li$; [556-63-8]	Pochtakova, E.I. **Zh. Neorg. Khim.** 1980, 25, 1147-1150; **Russ. J. Inorg. Chem. (Engl. Transl.)** 1980, 25, 637-639 (*).
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

EXPERIMENTAL VALUES:

The results are reported only in graphical form (see figure).



Characteristic point(s):

Eutectic, E_1, at 121 °C (author) and $100x_2$= 25 (according to Fig. 1 and Fig. 2 of the original paper, erroneously reported as $100x_1$ in the text; compiler).
Eutectic, E_2, at 154 °C (author) and $100x_2$= 60 (according to Fig. 1 and Fig. 2 of the original paper, erroneously reported as $100x_1$ in the text; compiler).

Intermediate compound(s):

$(CHO_2)_2KLi$, congruently melting at 163 °C (author).

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Visual polythermal method.	Not stated. Component 1: $t_{fus}(1)/°C$= 167. Component 2: $t_{fus}(2)/°C$= 273.
	ESTIMATED ERROR:
	Temperature: accuracy probably ±2 K (compiler).
	REFERENCES:

COMPONENTS:	EVALUATOR:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Magnesium methanoate (magnesium formate) $(CHO_2)_2Mg$; [557-39-1]	Franzosini, P., Dipartimento di Chimica Fisica, Universita' di Pavia (ITALY).

CRITICAL EVALUATION:

The system was studied by Berchiesi et al. (Ref. 1), who indicated component 1 as $(CHO_2)_2K_2$, and by Pochtakova (Ref. 2), who indicated component 1 as $(CHO_2)K$ in Table 6 of her paper, and as $(CHO_2)_2K_2$ in Fig. 2. Inspection of text and figures led both the compiler and evaluator to assume the latter formula as the correct one: consequently, a direct comparison is possible between data from either sources.

Comparison makes apparent that Pochtakova (Ref. 2), who seems not to be aware of Ref. 1, could obtain no evidence for the eutectic due to the fact that she performed no measurements at $0 < 100x_2 \leq 5$, while the eutectic composition (Ref. 1) is $100x_2 = 1.3$.

It is to be added that: (i) Berchiesi et al.'s fusion temperature of component 1 read by the evaluator on the original plot, i.e., $T_{fus}(1) \sim 169\ ^{o}C$ (442 K) agrees with the value $T_{fus}(1) = 441.9 \pm 0.5$ K reported in Table 1 of the Preface more satisfactorily than Pochtakova's figure (440 K); (ii) the solid state transition temperatures quoted for component 1 in Ref. 2 from Ref. 3 (i.e., 333, 408, and 430 K) cannot be identified with the relevant data of Table 1 of the Preface, where a single transition is mentioned which occurs at $T_{trs}(1)/K = 418 \pm 1$; and (iii) Pochtakova's points are affected by a scattering noticeably larger than Berchiesi et al.'s.

In conclusion, the evaluator recommends the data by Berchiesi et al. (Ref. 1), although regretting that they are presented only in graphical form, and not supported by any investigation of the solidus.

REFERENCES:

(1) Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G.
Can. J. Chem. 1972, 50, 1972-1975.
(2) Pochtakova, E.I.
Zh. Obshch. Khim. 1974, 44, 241-248.
(3) Sokolov, N.M.
Tezisy Dokl. X Nauch. Konf. S.M.I. 1956.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)_2K_2$; [590-29-4] (2) Magnesium methanoate (magnesium formate); $(CHO_2)_2Mg$; [557-39-1]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

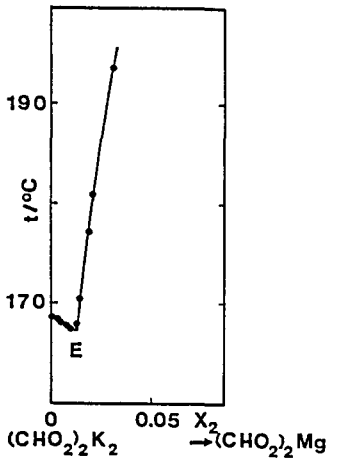
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 167.4 °C and x_2= 0.013 (authors).

Note - The investigation was limited to $x_1 \geq 0.97$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

SOURCE AND PURITY OF MATERIALS:

Component 1: C. Erba RP material of stated purity $\geq$ 99 %.
Component 2: K&K material of stated purity $\geq$ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably $\pm$0.1 K (compiler).

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

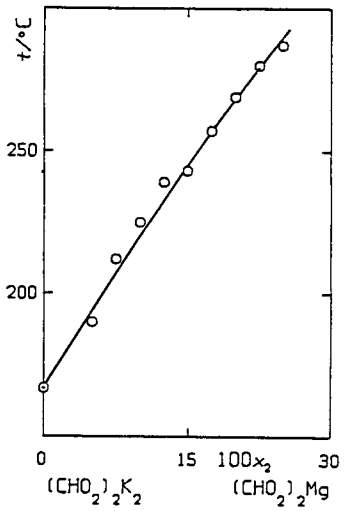
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)_2K_2$; [590-29-4] (2) Magnesium methanoate (magnesium formate); $(CHO_2)_2Mg$; [557-39-1]	Pochtakova, E.I. **Zh. Obshch. Khim.** 1974, 44, 241-248.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

EXPERIMENTAL VALUES:

t/°C	T/K[a]	$100x_2$
167	440	0
190	463	5
212	485	7.5
225	498	10
239	512	12.5
243	516	15
257	530	17.5
269	542	20
280	553	22.5
287	560	25

[a] T/K values calculated by the compiler.

Note - The system was investigated at $0 \leq 100x_2 \leq 25$ due to thermal instability of component 2. No characteristic point was observed in the mentioned composition region.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Visual polythermal method, supplemented with differential thermal analysis (no numerical DTA data, however, are tabulated by the author).	Materials prepared (Ref. 1) by reacting the proper ("chemically pure") carbonate with a slight excess of methanoic acid of analytical purity. Component 1 undergoes phase transitions at $t_{trs}(1)/°C$= 60, 135, 157 (Ref. 2). Component 2 undergoes a phase transition at $t_{trs}(2)/°C$= 140.
	ESTIMATED ERROR: Temperature: accuracy probably ±2 K (compiler).
	REFERENCES: (1) Sokolov, N.M. **Zh. Obshch. Khim.** 1954, 24, 1581-1593. (2) Sokolov, N.M. **Tezisy Dokl. X Nauch. Konf. S.M.I.** 1956.

COMPONENTS:	EVALUATOR:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Sodium methanoate (sodium formate); $(CHO_2)Na$; [141-53-7]	Spinolo, G., Dipartimento di Chimica Fisica, Universita' di Pavia (ITALY).

CRITICAL EVALUATION:

The binary CHO_2/K, Na was studied by Dmitrevskaya (as a side system of the reciprocal ternary CHO_2, NO_3/K, Na; Ref. 1) and by Leonesi et al. (as a side system of the reciprocal ternary CHO_2, Cl/K, Na; Ref. 2). In both papers, visual observation was employed, and investigation was restricted to the liquidus; moreover, the latter authors listed only the few numerical data which were relevant to their purposes.

The main features of the phase diagrams given in either source exhibit rather close similarities, as shown here:

	Ref. 1	Ref. 2
$T_{fus}(1)$/K:	440	441.9
$T_{fus}(2)$/K:	531	530.7
Intermediate compound (i.c.)	$(CHO_2)_4K_3Na$	$(CHO_2)_4K_3Na$
T_{fus}(i.c.)/K:	-	453.2
Eutectic E_1; T/K:	441	438.2
Eutectic E_1; x_2:	0.505	0.495
Eutectic E_2; T/K:	440	436.7
Eutectic E_2; x_2:	0.04	0.043

It is, however, to be stressed that: (i) Dmitrevskaya's liquidus branch rich in component 1 exhibits a maximum (unexplained by the author) at 444 K and $x_1 = 0.98$, whereas Leonesi et al. found a monotonically decreasing trend; and (ii) Dmitrevskaya quotes (from Ref. 3) the occurrence of phase transitions in component 1 (at 333, 408, and 430 K), and in component 2 (at 515 K) which have no correspondence in Table 1 of the Preface.

Due to these reasons, and to the higher accuracy to be attributed to the findings by Leonesi et al., the evaluator is inclined to recommend the data listed above under the heading "Ref. 2".

It is finally to be added that previous cryometric work had allowed Leonesi et al. (Ref. 4) to infer, on the basis of the well known equation

$$\lim_{m \to 0} \frac{(\Delta T/m)}{K} = 1 - \rho_0$$

(K: cryometric constant of component 1, used as the solvent; ΔT: experimental freezing point depression; m: molality of component 2, used as the solute), a limiting value ρ_0 about 0.17 for the ratio between the solute concentrations in the solid and liquid phases at equilibrium.

REFERENCES:

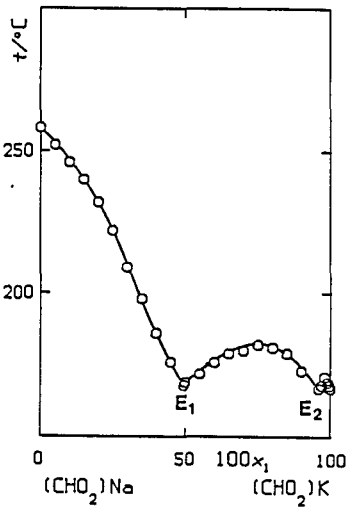
(1) Dmitrevskaya, O.I.
Zh. Obshch. Khim. 1958, **28**, 299-304 (*); **Russ. J. Gen. Chem. (Engl. Transl.)** 1958, **28**, 295-300.
(2) Leonesi, D.; Braghetti, M.; Cingolani, A.; Franzosini, P.
Z. Naturforsch. 1970, **25a**, 52-55.
(3) Sokolov, N.M.
Tezisy Dokl. X Nauch. Konf. S.M.I. 1956.
(4) Leonesi, D.; Piantoni, G.; Berchiesi, G.; Franzosini, P.
Ric. Sci. 1968, **38**, 702-705.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Sodium methanoate (sodium formate); $(CHO_2)Na$; [141-53-7]	Dmitrevskaya, O.I. **Zh. Obshch. Khim.** 1958, **28**, 299-304 (*); **Russ. J. Gen. Chem. (Engl. Transl.)** 1958, **28**, 295-300.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

t/°C	T/K[a]	$100x_1$	t/°C	T/K[a]	$100x_1$
258	531	0	176	449	60
252	525	5	179	452	65
246	519	10	180	453	70
240	513	15	182	455	75
232	505	20	181	454	80
222	495	25	179	452	85
209	482	30	173	446	90
198	471	35	167	440	96
186	459	40	168	441	97
176	449	45	171	444	98
168	441	49.5	169	442	99
169	442	50	168	441	99.5
172	445	55	167	440	100

[a] T/K values calculated by the compiler.



Characteristic point(s):

Eutectic, E_1, at 168 °C and $100x_1$= 49.5 (author).
Eutectic, E_2, at 167 °C and $100x_2$= 4 (author).

Intermediate compound(s):
$(CHO_2)_4K_3Na$ (congruently melting at 182 °C, compiler).

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Visual polythermal method; temperatures measured with a Nichrome-Constantane thermocouple.	"Chemically pure" materials, recrystallized and dried to constant mass. Component 1 undergoes phase transitions at $t_{trs}(1)/°C$= 60, 135, 157 (Ref. 1). Component 2 undergoes a phase transition at $t_{trs}(2)/°C$= 242 (Ref. 1).
	ESTIMATED ERROR: Temperature: accuracy probably ±2 K (compiler).
	REFERENCES: (1) Sokolov, N.M. **Tezisy Dokl. X Nauch. Konf. S.M.I.** 1956.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)K$; [590-29-4] (2) Sodium methanoate (sodium formate); $(CHO_2)Na$; [141-53-7]	Leonesi, D.; Braghetti, M.; Cingolani, A.; Franzosini, P. Z. Naturforsch. 1970, 25a, 52-55.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

Characteristic point(s):

Eutectic, E_1, at 165.0 °C and $100x_1$= 50.5 (authors).
Eutectic, E_2, at 163.5 °C and $100x_1$= 95.7 (authors).

Intermediate compound(s):

$(CHO_2)_4K_3Na$, congruently melting at 180.0 °C (authors).

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

SOURCE AND PURITY OF MATERIALS:

C. Erba RP materials, dried by heating under vacuum.
Component 1: $t_{fus}(1)/°C$= 168.7.
Component 2: $t_{fus}(2)/°C$= 257.5.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K.

REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Potassium methanoate (potassium formate); $(CHO_2)_2K_2$; [590-29-4] (2) Strontium methanoate (strontium formate); $(CHO_2)_2Sr$; [592-89-2]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

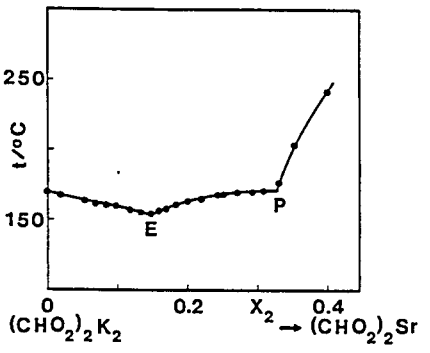
EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).

Characteristic point(s):

Eutectic, E, at 153.2 °C and x_2= 0.150 (authors).
Peritectic, P, at 170.8 °C and x_2= 0.327 (authors).

Note - The investigation was limited to $x_1 \geq 0.60$ due to thermal instability.



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 1 read by the compiler on the original plot, i.e., $T_{fus}(1)$~ 169 °C (442 K) agrees satisfactorily with the value $T_{fus}(1)$= 441.9±0.5 K reported in Table 1 of the Preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richest in component 2 proves poor miscibility of the solid components in this region is reasonable. No assumption is made by the authors about the nature of the peritectic equilibrium.

SOURCE AND PURITY OF MATERIALS:

Component 1: C. Erba RP material of stated purity ≥ 99 %.
Component 2: K&K material of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

REFERENCES:

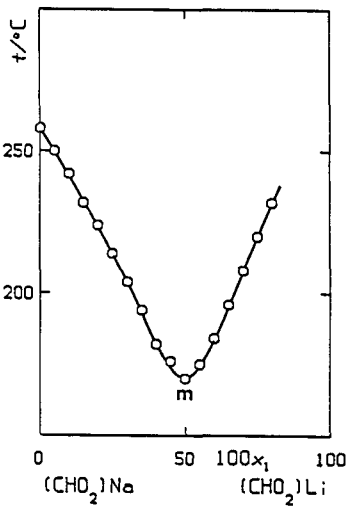
(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium methanoate (lithium formate); $(CHO_2)Li$; [556-63-8] (2) Sodium methanoate (sodium formate); $(CHO_2)Na$; [141-53-7]	Tsindrik, N.M. **Zh. Obshch. Khim.** 1958, **28**, 830-834.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

t/°C	T/K[a]	$100x_1$
258	531	0
250	523	5
242	515	10
232	505	15
224	497	20
214	487	25
204	477	30
194	467	35
182	455	40
176	449	45
170	443	50
175	448	55
184	457	60
196	469	65
208	481	70
220	493	75
232	505	80

[a] T/K values calculated by the compiler.



Characteristic point(s):

Minimum, m, at 170 °C and $100x_2 = 50$ (author).

Note - The system was investigated at $0 \leq 100x_1 \leq 80$.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
Visual polythermal method; temperatures measured with a Nichrome-Constantane thermocouple. NOTE: The fusion temperatures of both components, $T_{fus}(1) = 546$ K and $T_{fus}(2) = 531$ K, are in excellent agreement with the corresponding values listed in Table 1 of the Preface. The abscissa of point m, $100x_2 = 50$, coincides with that found by Pochtakova (Ref. 1), whereas its ordinate, 443 K, is somewhat lower than Pochtakova's value, i.e., 449 K.	Materials of analytical purity recrystallized twice (extrapolated t_{fus}/°C of lithium methanoate: 273; author). ESTIMATED ERROR: Temperature: accuracy probably ±2 K (compiler). REFERENCES: (1) Pochtakova, E.I. **Zh. Neorg. Khim.** 1980, 25, 1147-1150; **Russ. J. Inorg. Chem.** (Engl. Transl.) 1980, 25, 637-639 (*).

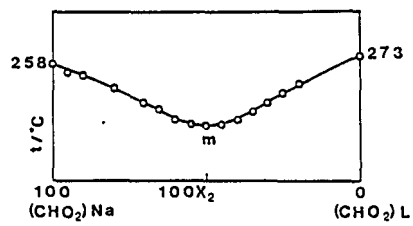
COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Lithium methanoate (lithium formate); $(CHO_2)Li$; [556-63-8] (2) Sodium methanoate (sodium formate); $(CHO_2)Na$; [141-53-7]	Pochtakova, E.I. Zh. Neorg. Khim. 1980, 25, 1147-1150; Russ. J. Inorg. Chem. (Engl. Transl.) 1980, 25, 637-639 (*).
VARIABLES: Temperature	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

The results are reported only in graphical form (see figure).

Characteristic point(s):

Continuous series of solid solutions with a minimum, m, at 176 °C (according to Fig. 1 and Fig. 2 of the original paper, erroneously reported as 716 in the text; compiler) and $100x_2 = 50$ (author).



AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Visual polythermal method.

NOTE:

The fusion temperatures of both components, $T_{fus}(1) = 546$ K and $T_{fus}(2) = 531$ K, are in excellent agreement with the corresponding values listed in Table 1 of the Preface. The abscissa of point m, $100x_2 = 50$, coincides with that found by Tsindrik (Ref. 1), whereas its ordinate, 449 K, is somewhat higher than Tsindrik's value, i.e., 443 K.

SOURCE AND PURITY OF MATERIALS:

Not stated.
Component 1: $t_{fus}(1)/°C = 273$.
Component 2: $t_{fus}(2)/°C = 258$.

ESTIMATED ERROR:

Temperature: accuracy probably ±2 K (compiler).

REFERENCES:

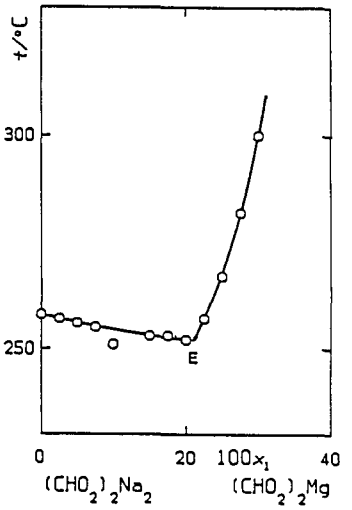
(1) Tsindrik, N.M.
Zh. Obshch. Khim. 1958, 28, 830-834.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Magnesium methanoate (magnesium formate); $(CHO_2)_2Mg$; [557-39-1] (2) Sodium methanoate (sodium formate); $(CHO_2)_2Na_2$; [141-53-7]	Pochtakova, E.I. **Zh. Obshch. Khim.** 1974, 44, 241-248.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

EXPERIMENTAL VALUES:

t/°C	T/K[a]	$100x_1$
258	531	0
257	530	2.5
256	529	5
255	528	7.5
251	524	10
253	526	15
253	526	17.5
252	525	20
257	530	22.5
267	540	25
282	555	27.5
300	573	30

[a] T/K values calculated by the compiler.



Note - The system was investigated at $0 \leq 100x_1 \leq 30$ due to thermal instability of component 1.

Eutectic, E, at 252 °C and $100x_1 = 21$ (author).

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

Visual polythermal method.

NOTE:

Concerning component 2, it can be remarked that the fusion temperature given by the author, $T_{fus}(2) = 531$ K, is in excellent agreement with the value listed in Table 1 of the Preface, i.e., 530.7±0.5 K, whereas the value quoted from Ref. 2 for the solid state transition temperature, $T_{trs}(2) = 515$ K, is noticeably higher than that reported in the Table, i.e., 502±5 K. It can be added that Berchiesi et al. (Ref. 3) asserted they could not investigate this binary due to thermal instability of the mixtures of any composition.

SOURCE AND PURITY OF MATERIALS:

Materials prepared by reacting the proper ("chemically pure") carbonate with a slight excess of methanoic acid of analytical purity (Ref. 1). Component 1 undergoes a phase transition at $t_{trs}(1)/°C = 140$. Component 2 undergoes a phase transition at $t_{trs}(2)/°C = 242$ (Ref. 2).

ESTIMATED ERROR:

Temperature: accuracy probably ±2 K (compiler).

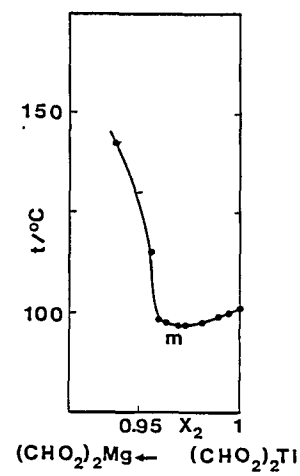
REFERENCES:

(1) Sokolov, N.M.
Zh. Obshch. Khim. 1954, 24, 1581-1593.
(2) Sokolov, N.M.
Tezisy Dokl. X Nauch. Konf. S.M.I. 1956.
(3) Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G.
Can. J. Chem. 1972, 50, 1972-1975.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Magnesium methanoate (magnesium formate); $(CHO_2)_2Mg$; [557-39-1] (2) Thallium(I) methanoate (thallous formate); $(CHO_2)_2Tl_2$; [992-98-3]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).



Characteristic point(s):

Minimum, m, at 97.0 °C and x_1= 0.030 (authors).

Note - The investigation was limited to $x_1 \leq 0.06$ due to thermal instability.

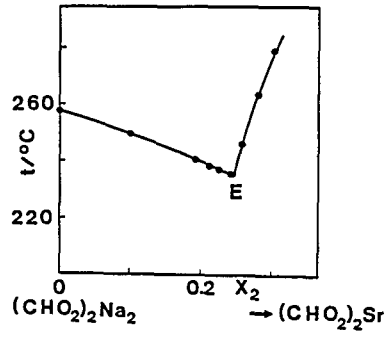
AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:	SOURCE AND PURITY OF MATERIALS:
A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.	Component 1: K&K material of stated purity $\geq$ 99 %. Component 2: BDH material of stated purity $\geq$ 99 %.
	ESTIMATED ERROR: Temperature: accuracy probably $\pm$0.1 K (compiler).
NOTE: The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2)$~ 101 °C (374 K) coincides with the values determined with DSC by Braghetti et al. (Ref. 2), and with DTA by Meisel et al. (Ref. 3), although being 3 K lower than that obtained with hot-stage polarizing microscopy by Baum et al. (Ref. 4). Solid solutions ought to form.	REFERENCES: (1) Braghetti, M.; Leonesi, D.; Franzosini, P. Ric. Sci. 1968, 38, 116-118. (2) Braghetti, M.; Berchiesi, G.; Franzosini, P. Ric. Sci. 1969, 39, 576-584. (3) Meisel, T.; Seybold, K.; Halmos, Z.; Roth, J.; Melykuti, C. J. Thermal Anal. 1976, 10, 419-431. (4) Baum, E.; Demus, D.; Sackmann, H. Wiss. Z. Univ. Halle 1970, 19, 37-46.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Sodium methanoate (sodium formate); $(CHO_2)_2Na_2$; [141-53-7] (2) Strontium methanoate (strontium formate); $(CHO_2)_2Sr$; [592-89-2]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES: Temperature.	PREPARED BY: Baldini, P.

EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).



Characteristic point(s):

Eutectic, E, at 235.4 °C and x_2= 0.246 (authors).

Note - The investigation was limited to $x_1 \geq 0.70$ due to thermal instability.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 1 read by the compiler on the original plot, i.e., $T_{fus}(1)$~ 258 °C (531 K) satisfactorily agrees with the value (530.7±0.5 K) reported in Table 1 of the Preface. The authors' assertion that the negative deviation with respect to ideality of the liquidus branch richer in component 2 proves poor miscibility of the solid components in this region is reasonable.

SOURCE AND PURITY OF MATERIALS:

Component 1: C. Erba RP material of stated purity ≥ 99 %.
Component 2: K&K material of stated purity ≥ 99 %.

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

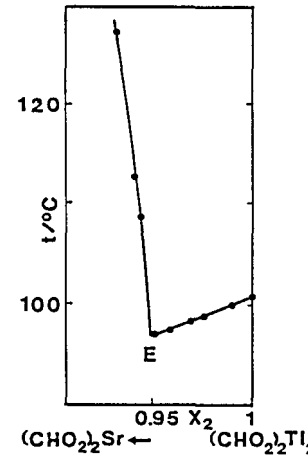
REFERENCES:

(1) Braghetti,M.; Leonesi,D.; Franzosini,P. Ric. Sci. 1968, 38, 116-118.

COMPONENTS:	ORIGINAL MEASUREMENTS:
(1) Strontium methanoate (strontium formate); $(CHO_2)_2Sr$; [592-89-2] (2) Thallium(I) methanoate (thallous formate); $(CHO_2)_2Tl_2$; [992-98-3]	Berchiesi, G.; Cingolani, A.; Leonesi, D.; Piantoni, G. Can. J. Chem. 1972, 50, 1972-1975.
VARIABLES:	PREPARED BY:
Temperature.	Baldini, P.

EXPERIMENTAL VALUES:

The experimental values are given only in graphical form (see figure).



Characteristic point(s):

Eutectic, E, at 96.8 °C and x_1= 0.051 (authors).

Note - The investigation was limited to $x_1 \leq 0.07$ due to thermal instability.

AUXILIARY INFORMATION

METHOD/APPARATUS/PROCEDURE:

A Pyrex device, suitable for work under an inert atmosphere, and allowing one to observe the system visually, was employed (for details, see Ref. 1). The initial crystallization temperatures were measured with a Chromel-Alumel thermocouple checked by comparison with a certified Pt resistance thermometer, and connected with a L&N Type K-3 potentiometer.

NOTE:

The fusion temperature of component 2 read by the compiler on the original plot, i.e., $T_{fus}(2)$~ 101 °C (374 K) coincides with the values determined with DSC by Braghetti et al. (Ref. 2), and with DTA by Meisel et al. (Ref. 3), although being 3 K lower than that obtained with hot-stage polarizing microscopy by Baum et al. (Ref. 4).

ESTIMATED ERROR:

Temperature: accuracy probably ±0.1 K (compiler).

SOURCE AND PURITY OF MATERIALS:

Component 1: K&K material of stated purity ≥ 99 %.
Component 2: BDH material of stated purity ≥ 99 %.

REFERENCES:

(1) Braghetti, M.; Leonesi, D.; Franzosini, P.
Ric. Sci. 1968, 38, 116-118.
(2) Braghetti, M.; Berchiesi, G.; Franzosini, P.
Ric. Sci. 1969, 39, 576-584.
(3) Meisel, T.; Seybold, K.; Halmos, Z.; Roth, J.; Melykuti, C.
J. Thermal Anal. 1976, 10, 419-431.
(4) Baum, E.; Demus, D.; Sackmann, H.
Wiss. Z. Univ. Halle 1970, 19, 37-46.