SHORT COMMUNICATIONS

CRYSTAL DATA ON LITHIUM *p*-NITROBENZOATE, LITHIUM 2,4-DINITROPHENOLATE(1,10-PHENANTHROLINE), LITHIUM PICRATE(1,10-PHENANTHROLINE) AND LITHIUM PICRATE(18-CROWN-6)

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SODIUM, potassium, magnesium and calcium play intriguing roles in biology[1,2] which are difficult to understand in view of the existing knowledge[3] about the interaction chemistry of s-block cations (abbr. M^{z+}) in general. This has led us to undertake broad-based studies[4] on M^{z+} ions which include synthesis and characterization of M^{z+}-compounds involving different anionic and neutral nucleophiles. The main point of examination is whether the product is a genuine homogenous solid phase and whether the M^{z+}-nucleophile interactions are definite. Herein we report (table 1) preliminary cell data on four lithium-derivatives all of which are novel crystalline phases. Cell data were calculated from oscillation and Weissenberg photographs with CuKα radiation. Density measurements were made by the flotation technique using benzene/bromoform mixtures.

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Table 1 *Crystal data on some lithium derivatives*[a]

	LiPnb	LiDnp(PHEN)	LiPic(PHEN)	LiPic(18-C-6)
Crystal	White, semi-transparent, needles	Dark yellow, transparent	Yellow transparent	Light yellow, transparent needles
Mol. Formula	$Li(C_7O_4NH_4)\cdot 3H_2O$	$Li(C_6N_2O_5H_3)(C_{12}N_2H_8)$	$Li(C_6N_3O_7H_2)(C_{12}N_2H_8)$	$Li(C_6N_3O_7H_2)(C_{12}O_6H_{24})$
Crystal system	Orthorhombic	Triclinic	Triclinic	Triclinic
a	7.11 ± 0.07 Å	11.22 ± 0.04 Å	17.93 ± 0.03 Å	7.84 ± 0.07 Å
b	26.14 ± 0.04 Å	22.28 ± 0.07 Å	12.46 ± 0.05 Å	13.22 ± 0.05 Å
c	11.22 ± 0.05 Å	13.65 ± 0.07 Å	15.65 ± 0.06 Å	15.78 ± 0.04 Å
α		85.7° ± 0.3°	75.2° ± 0.7°	96.9° ± 0.8°
β		92.2 ± 0.7	113.9 ± 0.4	87.25 ± 0.6
γ		94.5 ± 0.4	126.8 ± 0.4	95.8 ± 0.6
V	2084 Å^3	3215.3 Å^3	2474.6 Å^3	1551.9 Å^3
Mol. Weight	227.01	370.12	415.12	499.12
Density (Cal)	1.433 gm/cc	1.529 gm/cc	1.667 gm/cc	1.068 gm/cc
Density (Exp)	1.419	1.531	1.664	1.130*
μCuKα	1.17 cm^{-1}	0.99 cm^{-1}	1.16 cm^{-1}	0.88 cm^{-1}
Z	8	8	6	2
Space Group	$P_{2_12_12_1}$	P1 or $P\bar{1}$	P1 or $P\bar{1}$	P1 or $P\bar{1}$

[a] Key to abbreviations:— Pnb: para-nitrobenzoate, Dnp: 2,4-dinitrophenolate, PHEN: 1,10-phenanthroline, Pic: 2,4,6-trinitrophenolate (Picrate), 18-C-6: 18-Crown-6.
* Crystals are slightly soluble in benzene/bromoform mixture.