Erratum

Far Infrared and Millimetre Dielectric Response of Incommensurate and Ferroelectric K_2SeO_4

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The site symmetry of atoms in the hexagonal phase of K_2SeO_4 following the model by Sawada et al. is as follows: Se ($2d$ – point group D_{3h}), K^I ($2c$ – point group D_{3h}), K^{II} ($2a$ – point group D_{3d}), $O_4(4f-C_{3v}$ and $12k-C_s$). The atoms K^{II} are at other positions than assumed in the paper. This has an effect on the external vibration analysis summarized in Table 1 of the paper. Here we present the corrected Table 1. Symmetry coordinates and activity are expressed in orthorhombic coordinate system ($x||a$, $y||b$, $z||c$, $b>a>c$). x_1 , e.g. means a unit translation of the first atom K^I or group SeO_4 along the x -axis, x_2 means the same for the second equivalent atom or group in the primitive unit cell; primed and bared coordinates denote the unit translations of K^{II} atoms and the unit librations of SeO_4 -group, respectively.

All other conclusions based on symmetry considerations in our paper remain unchanged.

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Table 1

Phase II (D_{2h}^{16} , $Z=4$)			Phase I (D_{6h}^4 , $Z=2$)			
Sym. type	No. of ext. optic modes	Activity	Symmetry coordinates	Sym. type	No. of ext. optic modes	Activity
A_g	7	$\alpha_{xx}, \alpha_{yy}, \alpha_{zz}$	$x_1 - x_2; x'_1 + x'_2;$ $y'_1 - y'_2; \bar{z}_1 + \bar{z}_2$	M_4	5	—
			—	A_{1g}	—	$\alpha_{xx} + \alpha_{yy}, \alpha_{zz}$
B_{3g}	5	α_{yz}	$y_1 - y_2$	E_{2g}	2	$(\alpha_{xx} - \alpha_{yy}, \alpha_{yz})$
			$z_1 - z_2$	A_{2g}	1	—
			$\bar{x}_1 + \bar{x}_2$	M_2	2	—
B_{2g}	5	α_{xz}	$z'_1 - z'_2; \bar{y}_1 + \bar{y}_2$	M_6	4	—
			—	B_{1g}	—	—
			$\bar{y}_1 + \bar{y}_2$	E_{1g}	1	$(\alpha_{xz}, \alpha_{xy})$
B_{1g}	7	α_{xy}	$\bar{z}_1 + \bar{z}_2$	B_{2g}	2	—
			$x_1 - x_2$	M_8	4	—
			$y_1 - y_2; y'_1 + y'_2; x'_1 - x'_2$	M_3	3	—
A_u	5	—	$z_1 + z_2; \bar{x}_1 - \bar{x}_2$	A_{1u}	—	—
			—	E_{2u}	2	—
			$z'_1 - z'_2; \bar{y}_1 - \bar{y}_2$	A_{2u}	2	e_x
B_{3u}	6	e_x	$y'_1 - y'_2; \bar{z}_1 - \bar{z}_2$	M_1	2	—
			$x_1 + x_2; x'_1 + x'_2$	M_5	3	—
			$y_1 + y_2$	B_{1u}	1	—
B_{2u}	6	e_y	$x_1 + x_2; \bar{z}_1 - \bar{z}_2$	E_{1u}	2	(e_y, e_z)
			$x'_1 - x'_2$	B_{2u}	1	—
			$y_1 + y_2; y'_1 + y'_2$	M_7	1	—
B_{1u}	4	e_z	$z_1 + z_2; z'_1 + z'_2$			
			$\bar{x}_1 - \bar{x}_2$			
			$\bar{y}_1 - \bar{y}_2$			