

substance: $\text{La}_{10}\text{S}_{14}\text{O}_x\text{S}_{1-x}$, $\text{La}_{10}\text{S}_{14}\text{O}$
property: crystal structure

β - $\text{La}_{10}\text{S}_{14}\text{O}_x\text{S}_{1-x}$

crystal structure tetragonal ($\text{D}_{4h}^{20} - \text{I4}_1/\text{acd}$)

lattice parameters

$a = b$	15.62...15.36 Å	$0 \leq x \leq 1$	73B
c	20.62...20.41 Å		

β - $\text{La}_{10}\text{S}_{14}\text{O}$

crystal structure tetragonal ($\text{D}_{4h}^{20} - \text{I4}_1/\text{acd}$)

$a = b$	15.365(3) Å	81B
c	20.384 Å	

energy gap

E_g	2.69(7) eV	optical determination	81B
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Figures and further references:

crystal structure: Fig. 1

cathodoluminescence of Cu-doped samples: Fig. 2

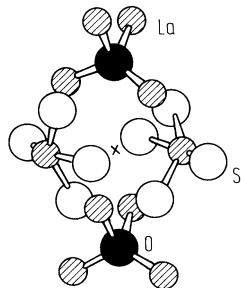
References:

- 73B Besancon, P.: J. Solid State Chem. 7 (1973) 232.
81B Bludau, W., Wichelhaus, W.: J. Appl. Phys. 52 (1981) 2750.

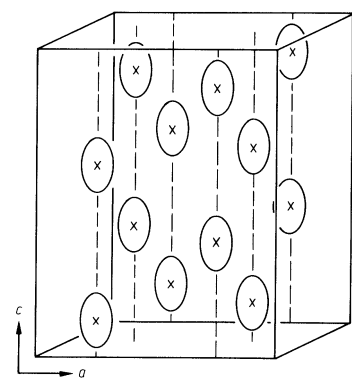
Fig. 1.

β - $\text{La}_{10}\text{S}_{14}\text{O}$. Cavities in the $\text{La}_{10}\text{S}_{14}\text{O}$ -structure. (a) Formation of a cavity, (b) arrangement of the cavities in the unit cell. The center of a cavity is marked by x [81B].

β - $\text{La}_{10}\text{S}_{14}\text{O}$



a



b

Fig. 2.

β -La₁₀S₁₄O. Cathodoluminescence intensity vs. wavelength for samples with different Cu content (at 20 kV electron beam excitation) [81B].

