

# Lu-S (Lutetium-Sulfur)

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The Lu-S phase diagram was unknown in [Massalski2]. [1997Oka] introduced the Lu-S phase diagram proposed by [1991And]. This phase diagram was updated by the same authors [1999And], and the updated form is shown in Fig. 1. Lu<sub>2</sub>S is a new phase found by [1999And]. In addition to the phases shown in Fig. 1, the existence of LuS<sub>2</sub> is known. However, its relationships to other phases are unknown.

Table 1 shows Lu-S crystal structure data.

## References

**1991And:** O.V. Andreev and N.N. Parshukov, Lu-Lu<sub>2</sub>S<sub>3</sub> System, *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1991, **27**(12), p 2511-2515, in Russian; TR: *Inorg. Mater.*, 1991, **27**(12), p 2156-2159

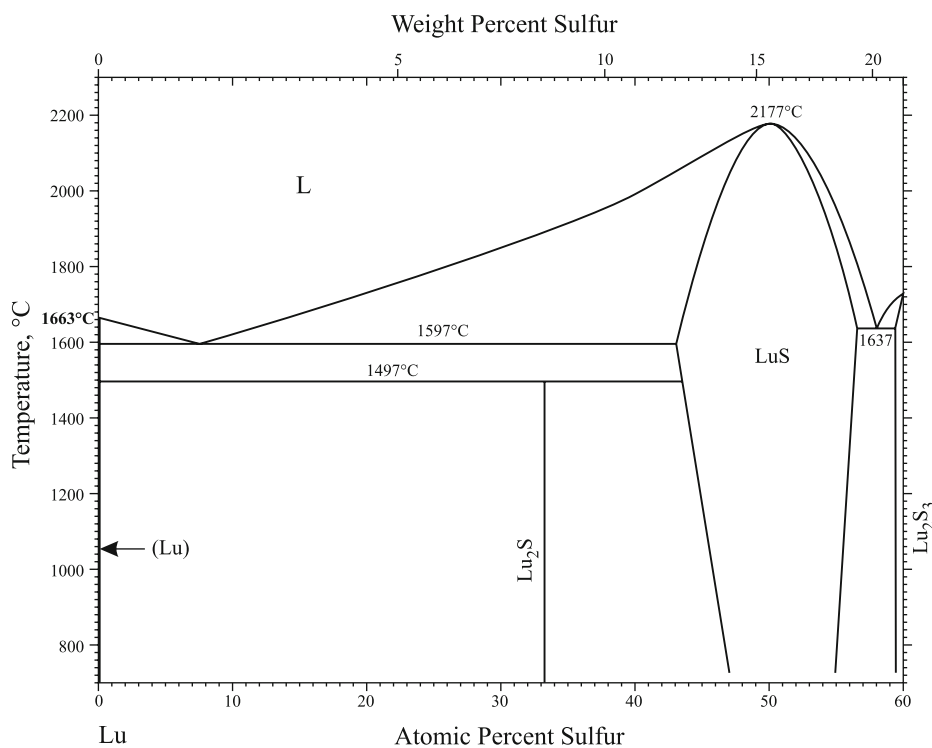
**1997Oka:** H. Okamoto, Lu-S (Lutetium-Sulfur), *J. Phase Equilib.*, 1997, **18**(5), p 489-490

**1999And:** O.V. Andreev, N.N. Parshukov, G.M. Kuz'micheva, and S.S. Sekerin, Phase Diagram of the Lu-Lu<sub>2</sub>S<sub>3</sub> System, *Zh. Neorg. Khim.*, 1999, **44**(6), p 962-965, in Russian; TR: *Russ. J. Inorg. Chem.*, 1999, **44**(6), p 1024-1027

**Table 1** Lu-S crystal structure data

Phase	Composition, at.% S	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Lu)	0	<i>hP2</i>	<i>P6<sub>3</sub>/mmc</i>	<i>A3</i>	Mg
Lu <sub>2</sub> S	33.3	...	...	...	...
LuS	43-56.5	<i>cF8</i>	<i>Fm<math>\bar{3}m</math></i>	<i>B1</i>	NaCl
Lu <sub>2</sub> S <sub>3</sub>	59.5 to ?	<i>hR10</i>	<i>R<math>\bar{3}c</math></i>	...	...
LuS <sub>2</sub> *	66.7	<i>cF24</i>	<i>Fm<math>\bar{3}m</math></i>	<i>C15</i>	Cu <sub>2</sub> Mg

\*Not shown in Fig. 1.



**Fig. 1** Lu-S phase diagram