

# Sb-Yb (Antimony-Ytterbium)

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The liquidus phase boundaries of the Sb-Yb phase diagram in [Massalski2] were schematic.

Figure 1 shows the Sb-Yb phase diagram of [1999Abu] that was determined by DTA and metallography.

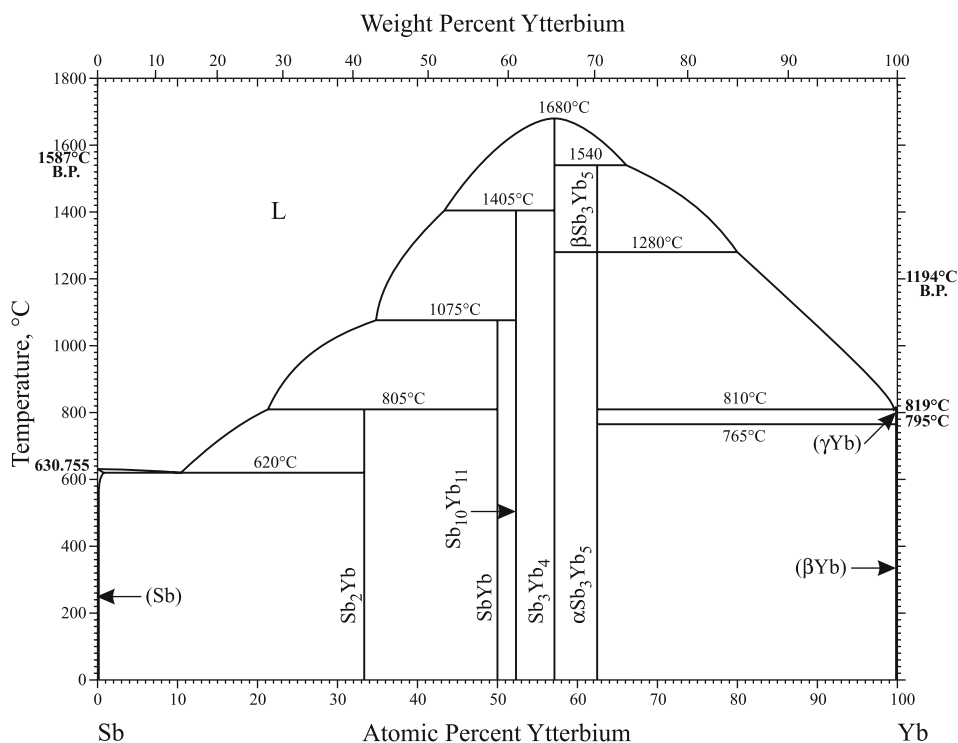
Table 1 shows Sb-Yb crystal structure data.

## Reference

**1999Abu:** V.D. Abulkhaev, Phase Relations and Properties of Alloys in the Yb-Sb System, *Neorg. Mater.*, 1999, **35**(5), p 530-533, in Russian

**Table 1** Sb-Yb crystal structure data

| Phase                                    | Composition, at.% Yb | Pearson symbol | Space group  | Strukturbericht designation | Prototype                       |
|--|----------------------|----------------|--------------|-----------------------------|---------------------------------|
| (Sb)                                     | 0                    | <i>hR2</i>     | $R\bar{3}m$  | <i>A7</i>                   | $\alpha$ As                     |
| Sb <sub>2</sub> Yb                       | 33.3                 | <i>oC12</i>    | <i>Cmcm</i>  | <i>C49</i>                  | ZrSi <sub>2</sub>               |
| SbYb                                     | 50                   | <i>cF8</i>     | $Fm\bar{3}m$ | <i>B1</i>                   | NaCl                            |
| Sb <sub>10</sub> Yb <sub>11</sub>        | 52.4                 | <i>tI84</i>    | $I4/mmc$     | ...                         | ...                             |
| Sb <sub>3</sub> Yb <sub>4</sub>          | 57.1                 | <i>cI28</i>    | $I\bar{4}3d$ | <i>D7<sub>3</sub></i>       | Th <sub>3</sub> P <sub>4</sub>  |
| $\beta$ Sb <sub>3</sub> Yb <sub>5</sub>  | 62.5                 | <i>hP16</i>    | $P6_3/mcm$   | <i>D8<sub>8</sub></i>       | Mn <sub>5</sub> Si <sub>3</sub> |
| $\alpha$ Sb <sub>3</sub> Yb <sub>5</sub> | 62.5                 | <i>oP32</i>    | <i>Pnma</i>  | ...                         | ...                             |
| ( $\gamma$ Yb)                           | 100                  | <i>cI2</i>     | $Im\bar{3}m$ | <i>A2</i>                   | W                               |
| ( $\beta$ Yb)                            | 100                  | <i>cF4</i>     | $Fm\bar{3}m$ | <i>A1</i>                   | Cu                              |
| ( $\alpha$ Yb)                           | 100                  | <i>hP2</i>     | $P6_3/mmc$   | <i>A3</i>                   | Mg                              |



**Fig. 1** Sb-Yb phase diagram