



Database name: TCS Superconductor Database
Database acronym: TCSC1 **Database version:** 1.0
Database owner: Thermo-Calc Software AB
Database segment: Ionic Solutions

Brief description

TCSC1 is intended for superconducting materials, but also for other oxide calculations. TCSC1 can be used also with other software from Thermo-Calc Software such as the TC-Programming Interfaces and DICTRA.

Applications

Superconducting materials.

Included Elements (6)

Ag Bi Ca
Cu O Sr

Included Phases

TCSC1 database contains an ionic liquid solution phase (IONIC_LIQ), solid solution phases (FCC_A1, BCC_A2, RHOMBOHEDRAL_A7), a gaseous mixture phase, intermetallic phases, many stoichiometric solid oxides and solid solution oxide phases. **In total there are 43 phases included in this database.**

For solid phases, the TCSC1 database is compatible with the SSOL Solutions Database, SSUB Substance Database, TCFE Steels/Fe-Alloys Database, TCNI Ni-based Superalloys Database and/or other appropriate databases.

Assessed Systems

Binary metallic systems:

Ag-Bi, Ag-Cu, Bi-Cu, Ca-Cu, Cu-Sr.

Binary, ternary and higher-order O-bearing systems:

Ag-O, Bi-O, Ca-O, Cu-O, Sr-O.

Higher order oxide containing systems (where all lower order systems have been evaluated):

Ag-Bi-O, Ag-Cu-O, Bi-Sr-O, Bi-Ca-O, Bi-Cu-O, Sr-Ca-O, Sr-Cu-O, Ca-Cu-O,
Ag-Sr-Cu-O, Ag-Ca-Cu-O, Bi-Sr-Ca-O, Bi-Sr-Cu-O, Bi-Ca-Cu-O, Sr-Ca-Cu-O,
Bi-Sr-Ca-Cu-O, Ag-Bi-Sr-Ca-Cu-O.

Limits

As in the spirit of the CALPHAD method, predictions can be made for multicomponent systems by extrapolation into multicomponent space of data critically evaluated and assessed based on binary, ternary and in some cases higher order systems. However, critical calculations must always be verified by equilibrium experimental data; it is the user's responsibility to verify the calculations but Thermo-Calc Software AB is interested to know about any significant deviations in order to improve any future release.

Scientific Models & References

See the Thermo-Calc Software reference list available at: <http://www.thermocalc.com/Library.htm>