

---

## SSUB6: SGTE Substances Database

---

Database name:	SGTE Substances Database	Database acronym:	SSUB
Database owner:	Scientific Group Thermodata Europe	Database version:	6.0

---

The SSUB6 Substances Database is a large thermochemical database containing 5746 pure condensed compounds or gaseous species. This database is used in applications such as alloy design and engineering, inorganic materials, gas phase chemistry, and solid-melts-aqueous-gas interactions.

The SSUB6 Substances Database by itself *alone* is particularly useful for:

- Tabulations of thermochemical data.
- Computations and tabulations of reactions and equilibrium constants.
- Computations of solid-gas equilibria in multicomponent systems (with no solid solutions), such as CVD calculations, potential diagram calculations, high-temperature corrosion calculations, and so forth.

This database is also extremely useful whenever it is necessary to append additional data for some compound phases and gaseous phase to a multicomponent heterogeneous interaction system that has been defined with uses of some other specific solid/liquid solution and/or compound databases for e.g. steels/Fe-alloys, Ni-based superalloys, Ti-/TiAl-/Al-/Mg-/Cu-/Zr-/...-based alloys, complex oxides/sulfides/nitrides/... solutions, slag, molten salts, Au-/Ag-/Cu-/Sn-based solders, noble metal alloys, semi-/super-conductors, ceramics, nuclear materials, minerals, aqueous solutions, and organic substances/solutions, among others, in various advanced applications of material systems and material processes.

### Included Elements (101)

Ac	Ag	Al	Am	Ar	As	At	Au	B	Ba	Be	Bi	Br	C	Ca	Cd	Ce
Cf	Cl	Cm	Co	Cr	Cs	Cu	Dy	Er	Es	Eu	F	Fe	Fm	Fr	Ga	Gd
Ge	H	He	Hf	Hg	Ho	I	In	Ir	K	Kr	La	Li	Lu	Mg	Mn	Mo
N	Na	Nb	Nd	Ne	Ni	Np	O	Os	P	Pa	Pb	Pd	Pm	Po	Pr	Pt
Pu	Ra	Rb	Re	Rh	Rn	Ru	S	Sb	Sc	Se	Si	Sm	Sn	Sr	Ta	Tb
Tc	Te	Th	Ti	Tl	Tm	U	V	W	Xe	Y	Yb	Zn	Zr	<i>D</i>	<i>T</i>	

### Included Phases

3188 condensed stoichiometric compound phases and one huge gaseous mixture phase are available in the SSUB6 database. The gaseous mixture phase (containing 2558 gaseous species) is the only solution phase in the database, and it is treated as ideal (in both EOS and mixing behaviours) at all temperatures, pressures and compositions.

### Assessed Systems

The SSUB6 Substances Database contains assessed thermochemical data for 5746 substances (3188 condensed compounds and 2558 gaseous species) within a chemical framework of 99 elements (and 2 hydrogen isotopes).

The assessed thermochemical data for each compound or species consist of:

- The enthalpy of formation at 298.15 K (relative to pure elements).
- The entropy at 298.15 K (from third thermodynamic law integrations or estimations).
- The temperature dependence of the heat capacity at constant pressure from 298.15 K up to the gaseous state.