



Database name: NPL Solder Solutions Database
Database acronym: NSLD2 **Database version:** 2.1
Database owner: National Physical Laboratory
Database segment: Solder Alloys

Brief description

NSLD2 is a suitable database for solder alloy solution phases.

Applications

Thermodynamic calculations of Pb-containing or Pb-free solder systems.

Included Elements

Ag Al Au Bi Cu Ge In Pb Sb Si Sn Zn

Included Phases

AG2IN	ALCU_ZETA	BCC_A2	CU6SN5_P	LAVES_C15
AGIN2	AU10SN1	BCT_A5	CU73SB20	LAVES_C36
AGSB_ORTHO	AU1SN1	BI1IN1	CU9SB2	LIQUID:L
AGZN_GAMMA	AU1SN2	BI1IN2	CUB_A13	RHOMBOHEDRAL_A7
AGZN_ZETA	AU1SN4	BI3IN5	CUIN_BETA	SB1SN1
AGZN3	AU2BI	BIIN_EPSILON	CUIN_DELTA	SB2SN3
AL2AU	AU2PB	CBCC_A12	CUIN_ETA	SB3ZN3_DZETA
AL2AU5	AU3IN	CU10SN3	CUIN_THETA	SB3ZN3_TETHA
ALAU	AU4IN	CU11SB2	CUSN_GAMMA_DO3	SB3ZN4_BETA
ALAU2	AU5SN1	CU19SI6_ETA	CUZN_GAMMA	SB3ZN4_GAMMA
ALAU4	AU62IN38	CU2SB	DIAMOND_A4	SBZN_OMEGA
ALCU_DELTA	AU7IN3	CU33SI7_DELTA	FCC_A1	TET_ALPHA1
ALCU_EPSILON	AUIN	CU3GE	FCC_BETA	TETRAGONAL_A6
ALCU_ETA	AUIN_ALPHA1	CU3SN	HCP_A3	ZINCBLENDE_B3
ALCU_GAMMA_D83	AUIN2	CU41SN11	HCP_ZN	LAVES_C15
ALCU_GAMMA_HIGH	AUPB2	CU4SI_EPSILON	INSN_BETA	
ALCU_PRIME	AUPB3	CU56SI11_GAMMA	INSN_GAMMA	
ALCU_THETA	AUSB2	CU6SN5	LAVES_C14	

Assessed Systems

Critically assessments and extrapolations have been conducted in the development of this solder alloy solution database.

Available binary subsystems are:

	Ag	Al	Au	Bi	Cu	Ge	In	Pb	Sb	Si	Sn	Zn
Ag	-	+	+	+	+	+	+	+	+	+	+	+
Al		-	+	+	+	+	+	+	+	+	+	+
Au			-	+	+	+	+	+	+	+	+	+
Bi				-	+	+	+	+	+	+	+	+
Cu					-	+	+	+	+	+	+	+
Ge						-	+	+	+	+	+	+
In							-	+	+	+	+	+
Pb								-	+	+	+	+
Sb									-	+	+	+
Si										-	+	+
Sn											-	+
Zn												-

Available ternary subsystems are:

Ag-Au-Pb, Ag-Sb-Sn, Al-Cu-Zn, Al-In-Sb, Bi-In-Pb and Cu-Si-Zn.

Limits

Critical calculations must always be verified by equilibrium experimental data; it is the user's responsibility to verify the calculations but Thermo-Calc Software 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/DOWNLOAD_AREA/References.html