

Special Metals & Alloys

Sealing Materials



These materials are used as sealing metals for CRTs, various electron tubes, lead-in seals for lighting equipment, semiconductor packages and other sealed glass or ceramic components. The point is to select the best-fit material that has the most similar thermal expansion coefficient to the objective glass.

Standard Specification

Product name	Composition [wt%]	Thermal expansion coefficient [X10 ⁻⁷ /°C]		Features	Applications
KOV (Kovar)	Ni 29, Co 17, Fe Bal.	30~400°C	48	It has a similar thermal expansion coefficient to that of hard glass, shows good contact with glass and has good machinability.	For ceramics, hard glass and semiconductors
NSI (42Alloy)	Ni 40.5, Fe Bal.	30~330°C	50		For lead frames of IC packages
PCV-K	Cr 18, Ti 0.4, Fe Bal.	30~500°C	115	It has a thermal expansion coefficient similar to that of soft glass, shows good contact with glass and produces electric-conductive oxides.	For stud pins of color CRTs
GNC (476Alloy)	Ni 47, Cr 6, Fe Bal.	30~400°C	102	It has a thermal expansion coefficient similar to that of soft glass, shows good contact with glass and has good machinability.	For soft glass Anode buttons for color CRTs
TNF (50Alloy)	Ni 50, Fe Bal.	30~400°C	99		For soft glass & semiconductors
NSL	Ni 42, Special ingredient Fe Bal.	30~330°C	50	Strengthened 42 alloy	Substitutes Kovar