

CERASOLZER / CERASOLZER-ECO

Ultrasonic activated solder alloy - flux free soldering on glass, ceramics, aluminium

CERASOLZER is a specially formulated solder alloy, designed to work with ultrasonic soldering systems. Together with heat and ultrasonic energy, it enables to solder on glass, ceramics, TCO, aluminium, stainless steel and other unsolderable materials. Solder is bonded to the substrate without using chemical agents, the whole soldering process is flux-free. The resulting joints have a high degree of electrical conductivity, adhesive strength, air/water tightness, weather and humidity resistance.

TECHNICAL SPECIFICATIONS

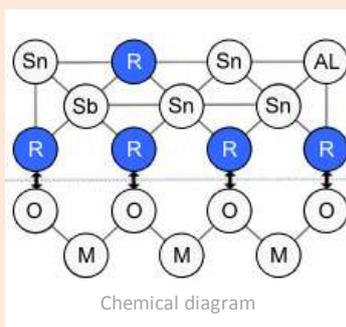
CERASOLZER (Leaded)	Ø Wire	Standard units	Melting point (liquidus)
#186	1.0 / 1.6 mm	150g / 1.0 kg	186 °C
#224	1.0 / 1.6 mm	150g / 1.0 kg	224 °C
#246	1.0 / 1.6 mm	150g / 1.0 kg	246 °C
#297	1.0 / 1.6 mm	150g / 1.0 kg	297 °C



CERASOLZER-ECO (RoHS/Lead free)	Ø Wire	Standard units	Melting point (liquidus)
#E 155	1.0 mm	150g	155 °C
#E 182	1.0 mm	150g	182 °C
#E 217	1.0 mm	1.0 kg	217 °C
#E 200AL *	1.6 mm	1.0 kg	200 °C



* for aluminium components



ADHESIVE MECHANISM OF CERASOLZER

CERASOLZER consists of same main components as standard solder alloys, however in addition to that it includes small amount of elements such as Zn, Ti, Si, Al, Be and Rare Earth, which have a very strong chemical affinity with oxygen. During the bonding process, these additional elements combine with ambient oxygen to form an oxide which is chemically bound to glass, ceramics, aluminium and other materials. Resulting oxide unites with the substrate to form an extremely strong chemical bond (RO) at the interface.

Flux destroys CERASOLZER's chemical bonds and corrupts the whole soldering process so it cannot be used. Ultrasonic vibrations are applied instead of flux in order to break and dissolve surface oxides. This principle is based on ultrasonic cavitation which is caused by strong ultrasonic penetration to the molten solder.



TYPICAL SOLDERING METHODS

Two-Step Method

In the first step (pre-soldering), Cerasolzer is fed to the tip of ultrasonic soldering iron and coated on glass, ceramics etc. In the second step (bonding), the metal fittings, outlet wire, ribbon, etc. are soldered on the pre-soldered substrate using ordinary solder or Cerasolzer.

One-Step Method

While Cerasolzer is sandwiched in a slit between metal and glass or ceramics or metal oxide, ultrasonic vibration is applied directly to the metal. Bonding is performed within a very short time.

Dipping Method

Cerasolzer is melted in a specific pot which is equipped with an ultrasonic vibrator. While the molten solder has a ripple on its surface caused by ultrasonic vibration, the part to be coated is dipped in.

SOLDERABLE MATERIALS

Glass, Ceramics, Precious Stones

Alumina, Beryllia, Bicole, Borosilicate glass, Ceramics, Ceran, Dielectric materials, Enamel, Fiber Optic Glass, Forsterite, Lead glass, Liquid crystal glass, Magnesia, Magnetic materials, Metallised glass, Mica, Mullite, Optical glass, Pyrex, Quartz glass, Resistant materials, Sapphire, Silica, Silica glass, Soda Lime glass, Thermal conductive materials, Titania, Ultrahard materials, Vycor, Zirconia

Metals, Metal Oxides

Aluminium (Al), Aluminium alloys, Beryllium (Be), Conductive glass, Conductive paste, Copper (Cu), Copper alloys, Enamelled metals, Germanium (Ge), Gold (Au), Chromium (Cr), Inconel, Kovar, Lead(Pb), Magnesium (Mg), Metal oxides, Molybdenum (Mo), Nickel (Ni), Nickel alloys, Nichrome, Niobium (Nb), Ruthenium (Ru), Semi-conductive materials, Silicon (Si), Silver (Ag), Sintered Metals, Stainless Steel, Tantalum (Ta), Tin (Sn), Titanium (Ti), Titanium alloys, Transparent conductive oxides ZnO, ITO, FTO, TO, ATO, GZO, GIT, Tungsten (W), Wolfram, Zinc (Zn), Zirconium (Zr)

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