

SOLDERING PROCESS

Abstract

A process by which molten solder is purified in-situ, making the soldering process more efficient and yielding better results, particularly for lead-free soldering. Leadfree solder becomes practical for use since the temperature for reliable soldering is reduced. A layer of active additive is maintained on the surface of molten solder for scavenging metal oxide from the solder and assimilating metal oxide into a liquid layer. The active additive is an organic liquid having nucleophilic and/or electrophilic groups. As an example, a layer of dimer acid maintained on a wave soldering apparatus scavenges metal oxide from the bath, and assimilates dross that may form on the surface. Scavenging metal oxide cleanses the bath and lowers viscosity of the solder, and PC boards or the like soldered on the wave have reliable solder joints.

Figure 4