

THIS SHEET HAS BEEN
REPLACED

This Sheet Has Been Replaced



ABSTRACT

A method of depositing a solid substance on the surface of the substrate in which the solid substance is dissolved in a solvent to create a first solution. The solid substance is less finely divided prior to dissolution than when deposited on the substrate and the deposition density of the solid substance on the substrate is regulated at least in part by solid substance concentration. The solid substance is insoluble in a liquified gas and the first solution is soluble in the liquified gas. The solvent also is capable of depressing the freezing point of the liquified gas upon expansion of the liquified gas. The first solution is dissolved in the liquified gas to create a second solution having a sufficient concentration of the solvent relative to the liquified gas that solidification of the liquified gas is substantially prevented upon the expansion thereof. Preferably, this concentration of solvent is a minimum to prevent overuse of environmentally hazardous solvents. The solution is sprayed against the substrate so that a portion of the liquified gas flashes into a vapor and the second solution containing a remaining portion of the liquified gas contacts and thereby coats the surface substrate. The remaining portion of the liquified gas is evaporated along with the solvent, so that the solid substance remains as a deposit on the substrate. The method has particular application to making very fine depositions such as are required in the electronics industry to coat contacts of printed circuit boards with flux prior to soldering.