



reactions and has a preference to be wetted by water. An added advantage of the film is its slight porosity. In other metals, such as zinc, this oxide layer can be dissolved by fatty acids in ink, thus exposing a bare surface which is more attractive to ink than water. The purpose of etching zinc with phosphoric acid is that the fatty acid attackable rust film is converted into a film of zinc phosphate which resists fatty acid attack and also shows greater affinity for water. The purpose of etching in lithography is to treat the surface of the plate so that layers of material are formed which have a strong natural affinity for water in preference to oily substances such as ink. The use of added gum arabic, which is a highly water-attracting substance, reinforces the water attraction by the film becoming bound on the surface of the phosphate film.

BB What is the importance of pH in lithography? How and when does pH become important in the lithographic process?

Banks The pH scale is a series of numbers from 0 to 14 which is used to express the acidity or alkalinity of a substance. For example, etching is often a complex way of producing layers of suitably desensitised materials on the surface of a plate, pH certainly has a part to play in an etching reaction. But in production its relevance is mainly in relation to fountain solutions and their effect on plate life, or possibly on the drying process of the ink printed. The recommended working range of a fountain solution is pH 5 to 7. If the solution is slightly acid it will help to keep the plate running clean, that is, it will help to keep the non-image areas