



Choice Of Alcohol

Before discussing the use of alcohol and problems associated with its use, it might be well to point out why isopropyl alcohol has been chosen for lithographic dampening. The names *Isopropanol* and *2-propanol* are also used for this alcohol. Isopropyl alcohol is slightly toxic and should not be taken internally. Its threshold limit value in air (maximum allowable concentration) is 400 parts per million (980mg. /cubic meter) its lower flammable limit is 2.0%. Other alcohols might be considered for use, but are rejected for various reasons: methyl alcohol (Methanol or wood alcohol) is too volatile and much too toxic to be used; ethyl alcohol (ethanol or grain alcohol) bears an exorbitant alcoholic beverage tax unless it is denatured, and the denaturants have shown themselves troublesome in lithography.

Normal propyl alcohol (n-propanol or 1-propanol) is more expensive than isopropyl alcohol, as are the three butyl alcohols. The butyl alcohols have bad odours. Other alcohols and glycols are too insoluble in water or evaporate too slowly to be as effective as isopropyl in dampening solutions. Isopropyl alcohol which boils at 82°C is somewhat less volatile than ethanol (B.P 78°C) and thus is not lost quite as rapidly from the dampening system. Methyl alcohol is much more volatile (B.P. 65°C) and normal propyl alcohol is significantly less volatile (B.P.98°C). Methyl alcohol is so volatile that it dries up the plate and fails to provide dampening. Isopropyl alcohol is available in three grades, 91%, 95% and Anhydrous 99%. Because the difference in price is so small, it is cheaper to buy the Anhydrous 99% grade.

Source: Lithographic Technical Foundation