

Revised Monograph Appeared in HPI Vol. IX

ALCOHOL FORTIS – STRONG ALCOHOL
(Alc.)

Chemical Symbol : C_2H_5OH

Mol. Wt.: 46.07

Description : A clear, colourless, mobile, volatile liquid; odour, characteristic and spirituous; taste, burning. It is miscible with water, forming clear, colourless solution, miscible with *acetone*, *ether* and *chloroform*, in all proportions. It boils at about 78° but volatilizes even at a low temperature and is readily inflammable, burning with a blue smokeless flame. It is commonly obtained by the distillation of fermented liquids, containing carbohydrates or by synthesis. It contains not less than 94.7 percent v/v or 92.0 percent w/w and not more than 95.2 percent v/v or 92.7 percent w/w of C_2H_5OH .

Identification : (i) To about 10 ml of a 0.5 percent v/v solution in *water*, add 2 ml of a 4 percent w/v solution of *sodium hydroxide* and then slowly add about 4 ml of solution of *iodine*; the odour of iodoform develops and a yellow precipitate is produced.

(ii) Refractive index n_D^{20} 1.3637 to 1.3639

(iii) Specific gravity (25°) 0.8104 to 0.8075

Test for steroid : Carry out TLC method for steroid as per appendix, HPI Vol. IX. No violet coloured spot appears.

Acidity or alkalinity : 20 ml requires not more than 0.2 ml of N/10 *sodium hydroxide* to give a pink colour with *phenolphthalein* solution or not more than 0.1 ml of N/10 *hydrochloric acid* to give a red colour with *methyl red solution*.

Aldehyde : To 10 ml add 5 ml of solution of *sodium hydroxide*, shake and allow to stand for five minutes; no yellow colour is produced.

Ketones : To 1 ml add 3 ml of *water* and 10 ml of solution of *mercuric sulphate* and heat in a boiling water-bath; no precipitate is produced in 3 minutes.

Fusel oil and allied impurities : Allow 25 ml to evaporate spontaneously in a porcelain dish protected from dust until surface of the dish is barely moist; no foreign odour is perceptible and on the addition of 1 ml of *sulphuric acid*, no red or brown colour is produced.

Oily or resinous substances : Dilute 5 ml to 100 ml with *water* in a cylinder; the solution remains clear when examined against a black Background.

Non-volatile matter : When evaporated and dried at 105°, leaves not more than 0.005 percent of residue.

Preparation : Used as a vehicle.

Strong Alcohol is diluted with Purified Water to produce *dispensing / dilute alcohols*. They

may be prepared as described below: The final adjustment of volume being made at the same time temperature about 20°, as that at which the Strong Alcohol is measured.

Dispensing alcohol : (90.0 percent) (limit 89.6 to 90.5 percent v/v) (Rectified spirit or 60.0 p spirit/ alcohol).

Dilute 947 ml of Strong Alcohol to 1000 ml with Purified Water. Specific gravity (20°/ 20°) 0.8289 to 0.8319.

Dilute Alcohol : (66 percent) (contains 62.5 percent v/v or 60.6 percent w/w). Dilute 695 ml of Strong Alcohol to 1000 ml with Purified Water. Specific gravity (20°/ 20°) 0.9139 to 0.9169.