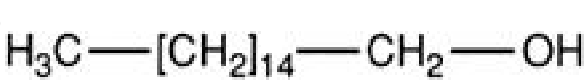
Cetyl alcohol (Alcohol cetylicus)



$C_{16}H_{34}O$

Chemical name. 1-Hexadecanol; CAS Reg. No. 36653-82-4.

Description. Unctuous, colourless flakes or a white, crystalline mass; odour, faint and characteristic.

Solubility. Practically insoluble in water; soluble in ethanol (~750 g/l) TS and ether R.

Category. Emulsifying agent; viscosity-increasing agent.

Storage. Cetyl alcohol should be kept in a well-closed container.

Requirements

Definition. Cetyl alcohol is a mixture of solid alcohols consisting mainly of 1-hexadecanol ($C_{16}H_{34}O$).

Melting range. 46-51 °C.

Acid value. Not more than 2.

Saponification value. Not more than 2.

Iodine value. Not more than 3.

Hydroxyl value. Place about 2 g, accurately weighed, in a glass-stoppered 250-mL flask, and add 2 mL of pyridine R and 10 mL of toluene R. To this mixture add 10 mL of a solution of acetyl chloride prepared by adding 10 mL of acetyl chloride R to 90 mL of toluene R. Insert the stopper in the flask, and heat in a water-bath at about 65 °C for 20 minutes. Add 25 mL of water, stopper the flask, and shake vigorously for several minutes to decompose the excess acetyl chloride. Titrate while shaking the flask vigorously throughout the titration in order to maintain the contents in an emulsified condition with carbonate-free sodium hydroxide (1 mol/l) VS, using 0.5 mL of phenolphthalein/ethanol TS as indicator, to a permanent pink end-point. Repeat the procedure without the Cetyl alcohol being examined and make any necessary corrections.

Multiply the difference in mL between the two titrations of carbonate-free sodium hydroxide (1 mol/l) VS by 56.1 and divide it by the mass in g of Cetyl alcohol used; 218-238.

Paraffin. Dissolve 0.5 g in 20 mL of neutralized ethanol TS by warming; the solution is clear and not more intensely coloured than standard colour solution Bn2 when compared as described under 1.11.1 Colour of liquids.

Sulfated ash. Not more than 1.0 mg/g.