Myristyl Alcohol

» Myristyl Alcohol contains not less than 90.0 percent of myristyl alcohol ($C_{14}H_{30}O$), the remainder consisting chiefly of related alcohols.

Packaging and storage— Preserve in well-closed containers.

USP Reference standards ⟨ 11 ⟩ **—** *USP Cetyl Alcohol RS*. *USP Myristyl Alcohol RS.*

Identification— The retention time of the major peak in the chromatogram of the *Assay preparation* corresponds to that in the chromatogram of the *System suitability solution*, as obtained in the *Assay.*

Melting range, *Class II* ⟨ 741 ⟩ : between 36° and 42°.

Acid value ⟨ 401 ⟩ : not more than 2.

Iodine value ⟨ 401 ⟩ : not more than 1.

Hydroxyl value ⟨ 401 ⟩ **—** Place about 2 g, accurately weighed, in a dry, glass-stoppered, 250-mL flask, and add 2 mL of pyridine, followed by 10 mL of toluene. To the mixture add 10.0 mL of a solution of acetyl chloride, prepared by mixing 10 mL of acetyl chloride with 90 mL of toluene. Insert the stopper in the flask, and immerse in a water bath heated at 60° to 65° for 20 minutes. Add 25 mL of water, again insert the stopper in the flask, and shake vigorously for several minutes to decompose the excess acetyl chloride. Add 0.5 mL of phenolphthalein TS, and titrate to a permanent pink endpoint with 1 N sodium hydroxide VS, shaking the flask vigorously toward the end of the titration to maintain the contents in an emulsified condition. Perform a blank test with the same quantities of the same reagents and in the same manner. The difference between the number of mL of 1 N sodium hydroxide consumed in the test with the sample and that consumed in the blank test, multiplied by 56.1, and the result divided by the weight, in g, of the Myristyl Alcohol used, represents the hydroxyl value of the Myristyl Alcohol, which is between 250 and 267.

Organic volatile impurities, *Method V* ⟨ 467 ⟩ : meets the requirements.

Solvent: dimethyl sulfoxide.

Residual solvents ⟨ 467 ⟩ **:** meets the requirements.
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Assay—

System suitability solution— Dissolve accurately weighed quantities of USP Myristyl Alcohol RS and *USP Cetyl Alcohol RS* in alcohol to obtain a solution containing about 9 mg per mL and 1 mg per mL, respectively.

Assay preparation— Dissolve 100 mg of Myristyl Alcohol in 10.0 mL of dehydrated alcohol, and mix.

Chromatographic system (see *Chromatography* ⟨ 621 ⟩)— The gas chromatograph is equipped with a flame-ionization detector and a 3-mm × 2-m column packed with 10% liquid phase G2 on support S1A. The carrier gas is helium. The column temperature is maintained at about 205° and the injection port and detector temperatures are maintained at about 275° and 250°, respectively. Chromatograph the *System suitability solution*, and record the peak responses as directed for *Procedure:* the resolution, *R,* between cetyl alcohol and myristyl alcohol is not less than 4.0; and the relative standard deviation for replicate injections is not more than 1.5%.

Procedure— Inject about 2 µL of the *Assay preparation* into the chromatograph, record the chromatogram, and measure the areas for the major peaks. Calculate the percentage of $C_{14}H_{30}O$ in the portion of Myristyl Alcohol taken by the formula:

$$100(r_U / r_S),$$

in which r_U is the peak area for myristyl alcohol obtained from the *Assay preparation;* and r_S is the sum of the areas of all the peaks except the solvent peak.

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