

Alcohol, Absolute, C_2H_5OH —**46.07**—Use ACS reagent grade Ethyl Alcohol, Absolute.

Alcohol, Aldehyde-free—Dissolve 2.5 g of lead acetate in 5 mL of water, add the solution to 1000 mL of alcohol contained in a glass-stoppered bottle, and mix. Dissolve 5 g of potassium hydroxide in 25 mL of warm alcohol, cool the solution, and add it slowly, without stirring, to the alcohol solution of lead acetate. After 1 hour shake the mixture vigorously, allow it to stand overnight, decant the clear liquid, and recover the alcohol by distillation.

Alcohol, Amyl—See *Amyl Alcohol*.

Alcohol, Dehydrated (*Absolute Alcohol*), C_2H_5OH —**46.07**—Use ACS reagent grade Ethyl Alcohol, Absolute.

Alcohol, Dehydrated Isopropyl—See *Isopropyl Alcohol, Dehydrated*.

Alcohol, Denaturated: It is ethyl alcohol to which has been added some substance or substances which, while allowing the use of the alcohol in most applications, renders it entirely unfit for consumption as a beverage. The most common denaturants used, either alone or in combination, are the following: methanol, camphor, aldehyd, amyl alcohol, gasoline, isopropanol, terpineol, benzene, castor oil, acetone, nicotine, aniline dyes, ether, cadmium iodide, pyridine bases, sulfuric acid, kerosene, and diethyl phthalate. Use a suitable grade.

Alcohol, Diluted—Use *Diluted Alcohol* (NF monograph).

Alcohol, Isobutyl—See *Isobutyl Alcohol*.

Alcohol, Isopropyl—See *Isopropyl Alcohol*.

Alcohol, Methyl—See *Methanol*.

Alcohol, Neutralized—To a suitable quantity of alcohol add 2 or 3 drops of phenolphthalein TS and just sufficient 0.02 N or 0.1 N sodium hydroxide to produce a faint pink color. Prepare neutralized alcohol just prior to use.

Alcohol, n-Propyl—See *n-Propyl Alcohol*.

Alcohol, Secondary Butyl—See *Butyl Alcohol, Secondary*.

Alcohol, Tertiary Butyl—See *Butyl Alcohol, Tertiary*.

Aldehyde Dehydrogenase—A white powder. One mg contains not less than 2 enzyme activity units.

ASSAY: Transfer about 20 mg, accurately weighed, to a 200-mL volumetric flask, dissolve in 1 mL of water, dilute with an ice-cold solution of bovine serum albumin (1 in 100) to volume, and mix. Use this solution as the *Assay preparation*. Dissolve 3.3 g of potassium pyrophosphate, 15 mg of dithiothreitol, and 40 mg of edetate disodium in 70 mL of water, adjust with citric acid monohydrate solution (2.1 in 10) to a pH of 9.0 ± 0.1 , dilute with water to 100 mL, and mix to obtain a pH 9.0 buffer. Dissolve an accurately weighed quantity of β -nicotinamide adenine dinucleotide (β -NAD) in water to obtain a β -NAD solution having a known concentration of about 20 mg per mL. Pipet 0.1 mL of the *Assay preparation* into a 1-cm spectrophotometric cell. Pipet 0.1 mL of water into a second 1-cm spectrophotometric cell to provide the reagent blank. Add 2.5 mL of pH 9.0 buffer, 0.2 mL of β -NAD solution, and 0.1 mL of pyrazole solution (0.68 in 100) to each cell, and mix. Stopper the cells, and allow to stand for 2 minutes at $25 \pm 1^\circ$. Add 0.01 mL of acetaldehyde solution (0.3 in 100) to each cell, and mix. Stopper the cells, and determine the absorbance of the solution obtained from the *Assay preparation* at a wavelength of 340 nm, using the solution obtained from the reagent blank as the

reference. Calculate the change, ΔA , in absorbance per minute for the solution obtained from the *Assay preparation*, starting at the point when the absorbance and time relationship becomes linear. One enzyme activity unit is defined as the amount of enzyme that oxidizes 1 μ mol of acetaldehyde per minute when the test is conducted under the conditions described herein. Calculate the enzyme activity units in each mg of aldehyde dehydrogenase taken by the formula:

$$[(2.91)(200)/(6.3)(0.1)(1000)](\Delta A/W)$$

in which ΔA is as defined above and W is the weight, in g, of aldehyde dehydrogenase taken.

Alizarin Complexone (*Alizarin-3-methyliminodiacetic Acid; Alizarin Fluorine Blue*), $C_{19}H_{15}NO_8$ —**385.32** [3952-78-1]—Use a suitable grade.

Alkaline Phosphatase Enzyme—See *Phosphatase Enzyme, Alkaline*.

Alkylphenoxypolyethoxyethanol—A nonionic surfactant. Use a suitable grade.

[NOTE—A suitable grade is available commercially as "Triton X-100" from Sigma-Aldrich, www.sigma-aldrich.com.]

Alpha-Chymotrypsin—25 kDa [9004-07-3]—Use a suitable salt-free grade for protein sequencing.

[NOTE—A suitable grade is available as catalog number 4423 from www.sigma-aldrich.com.]

Alpha-Cyclodextrin Hydrate (*Alpha-Schardinger Dextrin; Cyclohexaamylose*), $C_{36}H_{60}O_{30} \cdot xH_2O$ [51211-51-9]—Use a suitable grade with a content of NLT 98%.

[NOTE—A suitable grade is available as catalog number 22729 from www.acros.com.]

Alpha-(2-(methylamino)ethyl)benzyl alcohol—Use a suitable grade.

Alphanaphthol—See *1-Naphthol*.

Alprenolol Hydrochloride, $C_{15}H_{23}NO_2 \cdot HCl$ —**285.8** [13707-88-5]—Use a suitable grade.

Alum (*Ammonium Alum, Aluminum Ammonium Sulfate*), $AlNH_4(SO_4)_2 \cdot 12H_2O$ —**453.33** [7784-26-1]—Large, colorless crystals or crystalline fragments or a white powder. Soluble in 7 parts of water and in about 0.5 part of boiling water; insoluble in alcohol. Use ACS reagent grade.

Ammonium Alum—See *Alum*.

Alumina—See *Aluminum Oxide, Acid-washed*.

Alumina, Activated (*Aluminum Oxide*), [1344-28-1]—Use a suitable grade.

Alumina, Anhydrous (*Aluminum Oxide; Alumina specially prepared for use in chromatographic analysis*) [1344-28-1]—A white or practically white powder, 80- to 200-mesh. It does not soften, swell, or decompose in water. It is not acid-washed. Store it in well-closed containers.

Aluminon (*Aurin Tricarboxylic Acid, [tri]Ammonium Salt*), $C_{22}H_{23}N_3O_9$ —**473.43** [569-58-4]—Yellowish-brown, glassy powder. Freely soluble in water. Use ACS reagent grade.

Aluminum, Al—At. Wt. 26.98154 [7429-90-5]—Use ACS reagent grade, which also meets the requirements of the following test.

ARSENIC: Place 750 mg in a generator bottle (see *Arsenic in Reagents* under *General Tests for Reagents*), omitting the pledget of cotton. Add 10 mL of water and 10 mL of so-