

Pure Alcohol (Ethanol)

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| NOTE: ALL PRODUCTS IN THIS SECTION REQUIRE FEDERAL EXCISE TAX WITHOUT A BATF PERMIT |
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INTRODUCTION TO PURE ALCOHOL (ETHANOL)

Pure Undenatured Ethanol

Pure Ethanol is Ethyl Alcohol with no other additives or denaturants. Pharmco's Pure Ethanol is among the highest quality in the world. Pure Ethanol is often referred to as pure alcohol even though the term pure alcohol can refer to any proof of Ethanol. Pure Alcohol is still considered "pure" regardless of the "cut" of water (i.e., pure, 200 proof Ethanol is referred to as pure alcohol, while Vodka is also referred to as pure alcohol, even though it is only 80 proof). The term pure alcohol can also refer to other high purity alcohols such as Methyl Alcohol, Butyl Alcohol, Benzyl Alcohol etc..

Pure Alcohol (Ethanol) is also commonly referred to as Beverage Grade Alcohol. Beverage Grade Alcohol is always 192 proof and is derived from natural sources. Pharmco sells 192 proof Pure Ethanol which is our product "Grain Neutral Spirits". Pharmco does not however, sell alcohol for consumption purposes.

Pure USP Alcohol:

Pure Alcohol (Ethanol) is also commonly referred to as USP Alcohol. That is because only pure, undenatured Ethanol can be certified as the "grade" USP/NF (United States Pharmacopeia - National Formulary). Not all pure alcohol is certified as USP grade, but only 190 proof and 200 proof pure ethanol which meets or exceeds the stringent specifications set forth in the U.S. Pharmacopoeia.

Pure USP Alcohol is used in a wide variety of applications in the industrial, health, education and research markets. Pure USP Alcohol is desirable in many applications due to its high level of performance and low level of toxicity relative to other solvents.

200 Proof Ethanol is often referred to as "Dehydrated", "Anhydrous", or "Absolute Ethanol". Anhydrous Ethanol is preferred in water sensitive applications. Both 190 & 200 Proof Ethanol USP can be certified as Kosher. Pure USP Alcohol can be certified from Synthetic or Natural Sources.

Kosher Alcohol is a grade certification for pure, undenatured alcohol. It is alcohol that has been manufactured and packaged under the supervision and guidelines of a duly recognized Rabbinical Authority. Pharmco manufactures USP certified alcohol that is subsequently Kosher certified. To avoid receiving only USP and not USP-Kosher Alcohol, this product must be specifically requested at the time of ordering.

Natural vs. Synthetic:

All Ethanol Products can be made with naturally derived Ethanol (commonly referred to as "Grain" alcohol, or Grain Neutral Spirits), or synthetically produced Ethanol. Natural alcohol is commonly referred to as Grain Alcohol because almost all commercial alcohol produced in North America is derived from grain (corn). Not all naturally derived Ethanol however, comes from grain (corn). Ethanol can be naturally produced (fermented) from any carbohydrate source. Some of the other common sources are wheat, cane, beet and other fruits such as grape and apple. While grain and synthetic alcohol is technically the same (the molecule is identical), there are differences in the limited amount of contaminants in the product in the parts per million (ppm) range.

Pharmco Products manufactures both grain and synthetic grades alcohol. If these minute differences are critical to your application, then the type of alcohol must be specifically requested at the time of ordering.

190 vs. 200 Proof

All Ethanol products, whether pure or denatured, natural or synthetic, has a proof associated with the product description. The proof is a measure of the water content of the Ethanol portion of the product and any level of proof can be manufactured based upon the amount of water added (referred to as dilution or cut of water). To define it another way, the proof is a measure of the Ethanol content of Alcohol and is calculated as two times (2x) the actual Ethanol concentration by volume. Industrially, the majority of all Ethanol products, whether pure or denatured can be classified as 200 proof or 190 proof. The third most common proof is 192. This is used mainly in beverage grade applications.

Remember, the proof is a measure of the water or Ethanol content of pure or denatured Alcohol. This is true even if the Ethanol is only one component of the finished product as with all denatured Ethanol products. So every Ethanol product can be and should be referred to and requested **as 200 proof, 190 proof or some other proof.**

Proof Gallon vs. Wine Gallon:

Since the Federal Govt. taxes by the “Proof Gallon”, the proof becomes significant in taxable situations. For instance, 200 proof, pure Ethanol has two (2) “Proof Gallons” per every one (1) gallon of Alcohol. The actual physical quantity of one (1) gallon is then referred to as a “wine gallon.” 190 proof Ethanol has 1.9 proof gallons per wine gallon of Ethanol.

Taxable vs. Non-taxable Alcohol:

Pure alcohol is considered taxable alcohol. The Federal Govt. requires an excise tax of \$13.50/ proof gallon (200 proof, pure alcohol = \$27.00/wine gallon). A tax exempt certificate is required to be on file with Pharmco for us not to charge the Federal excise tax on pure alcohol. The excise tax is paid immediately to the Federal Govt. Pharmco Products does not make any profit from collecting or handling the excise tax, nor does it receive a portion of it as a fee. This is why Pharmco has strict policies regarding payment of the excise tax. All other denatured Ethanol products do not require the payment of a Federal Excise Tax. Only customers with an exemption from paying the Federal Excise Tax on Alcohol are free from paying this tax. Eligibility for exemption is determined by the BATF and not Pharmco.

Anhydrous Alcohol:

Anhydrous Alcohol literally means **no-water** alcohol but in reality means **low-water** alcohol. This distinction is synonymous with 200 proof Alcohol. Our anhydrous grades of Alcohol are always below 0.3% water, typically below 0.2% water and several grades are certified below 0.1% water. It is also important to note that the term “Anhydrous” is not synonymous with the term pure. Pure Alcohol denotes an undenatured alcohol, which could be anhydrous or hydrated (190 proof or some other cut or proof). The term anhydrous is not unique to Alcohol products. It is also used for a wide range of high purity solvents, many of which are manufactured by Pharmco.

Grain Neutral Spirits (GNS) is a term given to high purity, grain alcohol, which has a neutral odor. Pharmco’s Grain Neutral Spirits is derived from corn. GNS provides an attractive alternative to synthetic alcohol. Many customers use grain alcohol in their all-natural products. It is available as 200 proof (100%), 192 proof (96%) or 190 proof (95%). It meets or exceeds the stringent purity specifications of USP Ethanol (note, only 190 & 200 proof can be certified as USP). This product can also be certified as Kosher.

ACS Grade Alcohol is pure alcohol used in industry, hospitals and research facilities. This product meets or exceeds the stringent specifications set forth in the American Chemical Society’s Reagent Handbook. Ethanol ACS is a pure undenatured solvent. It is available as 190 proof (95% by volume) or 200 proof (100% by volume). 200 Proof Ethanol is often referred to as “Dehydrated”, “Anhydrous”, or “Absolute Ethanol”. Anhydrous Ethanol is preferred in water sensitive applications.

Organic Alcohol is a Specialty pure alcohol derived from organically grown corn. All phases of the production process including fermentation, distillation, packaging and shipping are done under strict organic guidelines. Pharmco has been certified by **Quality Assurance International** to handle Organic Grain Alcohol. Organic Alcohol meets consumer demand for a naturally pure product. It is an ideal raw material in flavor/herbal extractions, organic cosmetics, fragrances and personal care products. Pharmco’s Organic Alcohol is gluten-free. Gluten, a protein component of the corn kernel is removed early in the distillation process. Therefore, consumers sensitive to gluten allergens can safely use this product. Pharmco’s Organic Alcohol is also certified as Kosher and can therefore be used in practically all manufacturing processes. Organic Alcohol is only available at 190 proof, in minimum sizes of 5 gallon. Organic Alcohol is much more expensive than Grain Neutral Spirits and is generally cost effective only in high-end applications.