



What You Need to Know About Using Fuel Ethanol For Hand Sanitizer Production

Q. May I use fuel ethanol as the base alcohol for hand sanitizer?

A. Maybe. But you will probably have to re-distill it and get a lab analysis.

Q. So How Do I Know?

A. There are hundreds of fuel ethanol plants around the country. A few of them also produce beverage alcohol. If they do, and the ethanol comes from the beverage ethanol plant and is transferred and transported in equipment that is clean and documented as free of contaminants, you may proceed. Ask for a COA that gives lab certified results of the contaminants noted below. This should be signed (not “signature on file”, but hand signed by the ethanol refinery lab). A verbal or email sign-off isn’t enough.

If you are seeking to use ethanol from a plant that does not routinely produce beverage alcohol, the fuel alcohol must meet the USP standards for ethanol.

Q. What parameters should I be aware of when getting ethanol delivered?

A. If **bulk via trucks**, the truck needs to be steam cleaned to “white glove” conditions, including all pumps and hoses in order to remove contaminants such as gasoline and other denaturants from previous loads.

If **offloaded to IBC or Drum**, the loading conditions (pipes, pumps, hoses) at the ethanol refinery must be steam cleaned prior to use to avoid contamination of any previously pumped denaturants or other impurities.

Q. How do I know if alcohol from a fuel ethanol plant is suitable and meets the USP standard?

A. The USP standard for ethanol is meant to ensure a minimum level of purity in order to protect the health and safety of users. There are two substantial differences between fuel ethanol and beverage ethanol that impact ‘usability’.

1. Additives, Contaminants, Denaturants (specific to fuel production).

Fuel ethanol plants introduce a number of additives in the production process. They cannot be distilled out and they do not meet the USP standard. In order to take ethanol from a fuel plant, you must ensure the ethanol was diverted from the system upstream from any introduction of additives. If this condition is met, you may safely proceed to step 2.

2. Methanol, Acetaldehyde, and other “Total Impurities”- USP standard calls for not more than 200 ppm of methanol.

Fuel ethanol plants are not designed or constructed to take off heads, therefore the amount of methanol, acetaldehyde and other impurities will likely far exceed the USP minimum allowed. Once you have confirmed there are no fuel/gasoline additives, you must re-distill the ethanol to remove heads to achieve impurities below the acceptable limits.

Type	Measurement	USP Limits
Total Impurities	mg/kg	300
Acetaldehyde	mg/kg	10
Methanol	mg/kg	200
Denaturants (of any kind, other than those called out in 27 CFR 20 & 21 (40A), (40B), or (3C))	mg/kg	0