

Sasol High Purity Ethanol

Sasol Chemicals



Background

Sasol manufactures a variety of high-quality synthetic ethanol products derived from the Fischer- Tropsch process. Sasol's unique manufacturing technology produces ethanol with exceptionally low levels of benzene and methanol. Sasol offers denatured-, high-purity- and ultra-high purity ethanol grades.

- FT synthesis ensures consistency and absence of typical impurities found in fermented products and synthetic ethanol produced via ethylene hydration;
- Multi-step extractive distillation to purify and polish;
- Benzene-free dehydration process;
- 20 Year track record in a variety of industries and countries;
- Inventory in most major markets with end-to-end quality assurance;
- Typical impurity profiles < 1ppm benzene, < 10ppm acetaldehyde,
 < 20 ppm methanol.

Product range

Sasol SYNTH ^x	Ultra high-purity ethanol (99.99%m/m)
Sasol Ethanol 99.9UN	High purity ethanol (99.9%m/m)

(Sasol also offers blended and denatured ethanol grades in some locations)

Focus markets

Sasol is focused on supplying customers in technical and industrial markets. The purity profile of our products makes them suitable for use in a variety of applications including inks, paints, coatings, adhesives, cleaning, chemicals synthesis, flavors & fragrances, personal care, and pharmaceuticals.

Our commitment to quality

Sasol prioritizes delivering top-quality products to its customers by implementing rigorous standards for quality, safety, and environmental practices. Sasol's dedication to quality remains unwavering. Our ethanol meets the requirements of the International Council for Harmonization (ICH) for metal content (ICH Q3D – R2), residual solvent impurities (ICH Q3C – R8) and mutagenic impurities (ICH M7 – R2). While not GMP, CGMP or Pharmacopeia certified, Sasol's ethanol has been successfully qualified by many multinational brand owners for use in personal care products and pharmaceutical processes.

Product Fact Sheet

What makes Sasol's ethanol unique?

Ethanol is typically produced via one of two processes:

- Naturally via the fermentation of sugars or starches;
- Synthetically via the hydration of ethylene.

Global production of ethanol is dominated by anaerobic fermentation; a biological process in which yeasts converts sugars such as glucose, fructose, and sucrose into cellular energy, producing ethanol and carbon dioxide. Many metabolic by-products are secreted by the yeast during this process, making the impurity profile variable and unpredictable. For fuel and technical applications, benzene is commonly used to remove small amounts of water from wet ethanol through azeotropic distillation.

Sasol's proprietary process consists of Fischer-Tropsch synthesis followed by extractive distillation using inert hydrocarbons to facilitate the fractionation. This imparts our product with exceptionally low levels of methanol (common in fermentation), benzene (common in water removal) and acetaldehyde (common in competitive synthetic technologies).

Sasol Ethanol was compared to a high purity fermentation ethanol product using Comprehensive Two-Dimensional Gas Chromatography coupled with Time-of-Flight Mass Spectrometry (GCxGC-TOFMS). The results are visually presented in the graphic to the right.

Although both products had a nominal purity of 99.9% m/m, the fermentation ethanol contained 130% more impurities than the Sasol Ethanol 99 UN.



Figure 1: Sasol's Ethanol 99.9 UN



Figure 2: Analysis of fermentation ethanol from a competitor

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