

## Ethanol for the Personal Care Industry

### DESCRIPTION

A clear colorless liquid with a sweet smell, ethanol is a protic solvent miscible with water and other liquids making it an ideal solvent in personal care applications. In addition to its solvency power, ethanol can be used as a preservative or an intermediate in personal care applications. The evaporative properties of ethanol impart a cool feel to the skin and provide quick delivery of items, such as polymers, for applications like skin and body care, as well as hair care.

Equistar produces a variety of ethanol products including 190 and 200 proof formulations, several proprietary solvent grades, Specialty Denatured Alcohols (SDAs), and Completely Denatured Alcohols (CDAs). Equistar's ethanol is synthetically produced by the direct hydration of ethylene at our Tuscola, IL plant located 150 miles south of Chicago. Equistar denatures its ethanol for a variety of customer applications at Tuscola, and Newark, NJ.

### APPLICATIONS

In the personal care market, ethanol is used in the following applications:

- perfume
- cologne and after-shaves
- hairspray
- mouthwash
- body care - splash and sprays
- nail enamel
- astringents
- fluoride toothpaste
- scalp preparations

### PHYSICAL PROPERTIES

CAS Number.....	64-17-5
Formula Weight .....	46.07
Boiling Point (°C) .....	78.3
Melting Point (°C) .....	-115
Density (20/20°C) .....	0.785
Flash Point (°C/°F).....	8 (48)
Refractive Index (20°C).....	1.3614
Dielectric Constant.....	24.3
Evaporation Rate (nBuAc=100) .....	170

**Fragrances and Colognes.** Denatured ethanol is typically used as a carrier for perfume oils found in fragrances and colognes. Water is commonly used in conjunction with ethanol to help modify the fragrance intensity and to ease skin application. The concentration of ethanol in perfumes and colognes can vary but is typically near 80%. Request information on Equistar ethanol SDA-39C.

**Hairspray.** The most commonly used solvent in hairspray is primarily denatured ethanol. The solvency power of ethanol and its quick evaporation rate make it an ideal solvent in this application. Many hairspray formulations contain upwards of 50% ethanol. Request information on Equistar ethanol products SDA-40-2 and SDA-40B.

**Preservative.** Ethanol can be used as an antibacterial agent in mouthwashes, nail enamel, and astringents. Request information on Equistar ethanol products SDA-37, SDA-38b, SDA-38f; SDA-23A; and SDA-40, respectively.

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