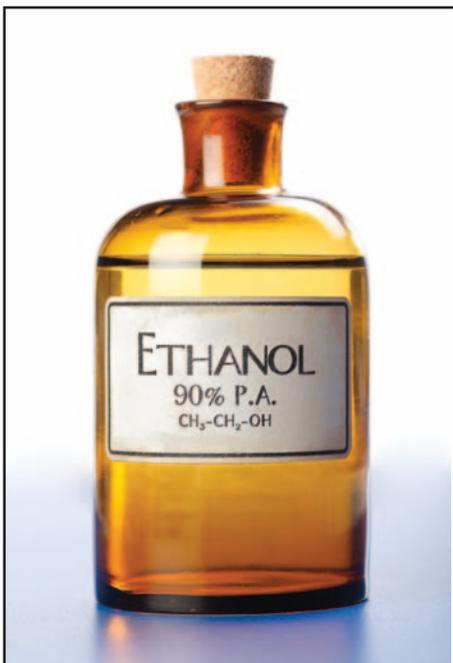


PURE ALCOHOL



Ethyl Alcohol (or Ethanol) is a clear, volatile liquid that burns easily, has a boiling point of 78.4°C, has a slight but distinctive odor and is very soluble in water. It is the main psychoactive ingredient in alcoholic beverages. A psychoactive substance enters the brain via the bloodstream and affects the central nervous system.

Ethanol is an organic compound composed of carbon, oxygen and hydrogen. Its chemical formula is $\text{CH}_3\text{CH}_2\text{OH}$.

10ml of pure Ethanol equals 1 unit of alcohol.

ALCOHOLIC BEVERAGES

Ethanol, or drinking alcohol, is used in the production of alcoholic beverages. Most alcoholic beverages are fermented to produce ethanol which will result in an ABV (Alcohol by Volume) of up to 14%. To produce stronger beverages manufacturers will further distill, or fortify, the fermented solution.

ALCOHOL AS A FUEL

Ethanol is also used as a bio-alternative to motor fuel. There are four main stages to producing ethanol for fuel, these are; fermentation, distillation, denaturing (although denaturing is an optional part of the process). Using ethanol as a fuel reduces the level of exhaust emissions, including carbon monoxide, which are known to damage the Earth's protective ozone layer.

INDUSTRIAL SOLVENTS

Pure alcohol is also used in many industrial and chemical processes. It can be found in cleaning products, cosmetics and personal care products, to name but a few. Denatured alcohol is normally used for products which are not destined for human consumption. Denatured alcohol is pure alcohol to which other additives, most commonly Methanol is added to make it poisonous and unfit for human consumption.

CLINICAL, MEDICAL & SURGICAL

For centuries alcohol has been recognized as having anti-bacterial and anti-septic uses. Alcohol is still used today in hand wipes and gels, surface cleaning solutions and for sterilizing surgical equipment. Alcohol kills germs by poisoning their proteins and dissolving their molecules.

SCIENCE EXPERIMENT



SODA SNAKE

For this experiment you will require:

- Sand
- Ethanol
- Baking Soda
- Sugar
- Matches
- Heat-proof surface
- Safety equipment including goggles

METHOD

Place a small mound of sand on a heat proof surface and make a golf ball-sized indent in the top. Pour 5 tsps. of Ethanol into the indent.

In a separate bowl gently mix 1 tsp. of baking soda with 4 tsps. of sugar and pour into the top of the mound on top of the ethanol.

Stir the mixture gently being careful not to collapse the mound. Light the mound with a match by touching the flame to the mixture at the top of the mound.

Once ignited a snake will grow out of the mound.

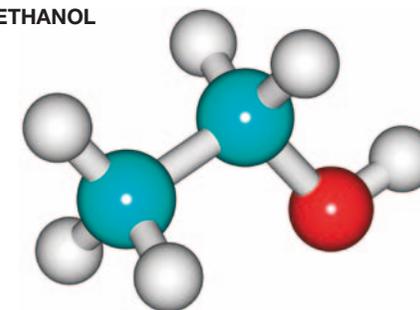
CONCLUSION



During combustion the snake will form because the burning alcohol creates heat causing the baking soda to release carbon dioxide. The sugar becomes caramelized, turns back and is forced out by the carbon dioxide being released.

To make this experiment more colorful add food coloring to the baking soda and sugar mixture.

ETHANOL



Ethanol is an organic compound composed of carbon, oxygen and hydrogen. Its chemical formula is $\text{CH}_3\text{CH}_2\text{OH}$.