

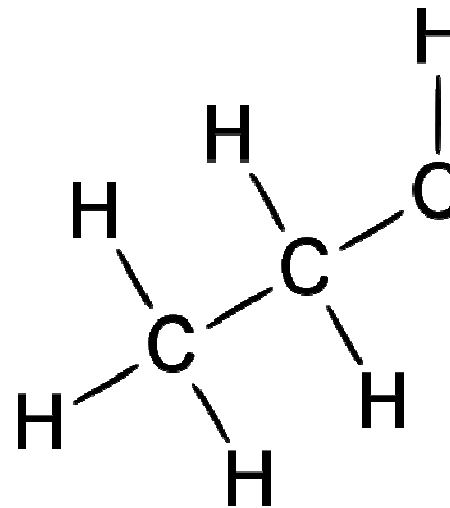
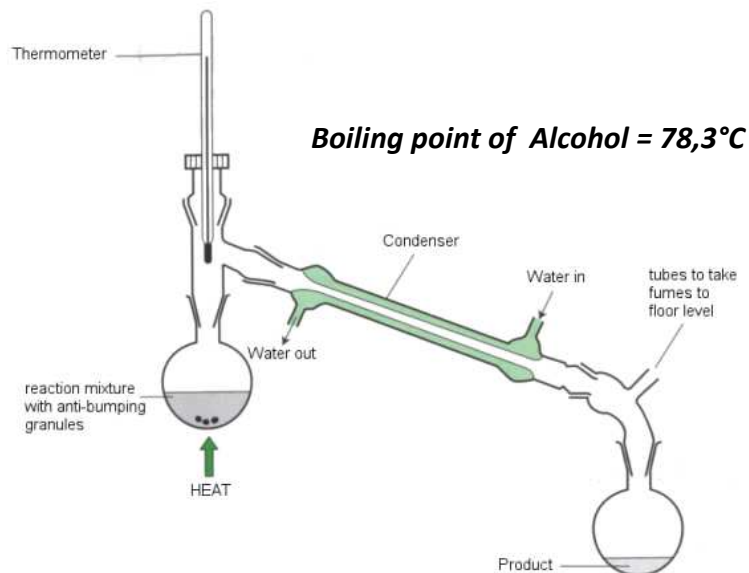
How starch turns to alcohol

Alcohol, suitable for consumption is extracted from fruits or grain (from barley for Malt Whisky) by alcoholic fermentation. The subsequent principle of distillation has been known for millennia and has been used for purifying and concentrating alcohol since ancient times. In the process, the distillers make use of the different boiling points of alcohol and water. When extracting alcohol from grain (barley), the grain's starch is at first converted into malt sugar (maltose) and after that fermented to ethyl alcohol by adding yeast. Next to dextrin, malt sugar $C_{12}H_{22}O_{11}$ is a natural breakdown product of starch and consists of two parts dextrose.

Industrially, malt sugar is extracted from germinated barley. The sweetness of the maltose equals about a third of the common white sugar (saccharose).

During digestion, malt sugar also develops in the human gastrointestinal tract. Plants form maltose when the grain germinates. Chemically, fermentation is the process of splitting sugar into alcohol and CO_2 (carbon dioxide) by adding yeast (at an adequate temperature).

The exact term for alcohol is ethyl alcohol or ethanol; the chemical formula is C_2H_5OH . A gram of alcohol contains 7.07 calories (kcal) = 29.6 joule. In the fermentation process, the solution reaches a maximum alcohol concentration of 18 per cent before the yeast fungi die off.



Alcohol = C_2H_5OH

