Green chemistry: Principles developed by chemists and the chemical industry to enact a more sustainable industry.

Commonly accepted principles of green chemistry:

* Prevention – Preventing waste is easier than cleaning it up.
* Atom economy – Maximise the incorporation of all materials used during the process into the final.
* Less hazardous chemical synthesis – Generating little or no toxic products or by-products.
* Safer solvents and auxiliaries – These should be made unnecessary wherever possible and innocuous.
* Design for energy efficiency – Energy requirements should be minimised.
* Use of renewable feedstocks

Ethanol:

Fermentation (greener method):

|  |  |
| --- | --- |
| Hydrolysis of sucrose: |  |
| Fermentation: |  |
| Overall: |  |