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Short Communication on Green Chemistry

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Abstract

The concept of greening chemistry was introduced to prevent the pollution initiatives caused by the business and regulatory communities as a natural evolution. Into the development we have caused unintended harm to our planet and humans. Green chemistry is a diverse topic and has applied its intensified attention among the academic, industrial, and regulatory communities.

Keywords: Environmental impacts; Toxic reagents

Introduction

Green chemistry is the proposal of chemical products and processes that reduce or eliminate the use or generation of toxic substances to the environment. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, use, and ultimate disposal. The products recycled to its best use again without causing any hazardous effect on environment are Green products [1].

Designing safer chemicals

Manufacturing safer products maintaining best function and efficacy and minimizing toxic levels of them would be the most challenging aspect. This can be achieved by understanding of not only chemistry but also of the principles of toxicology and environmental science. Highly reactive chemicals are often used by chemists to manufacture products because they are quite valuable at affecting molecular transformations. However, they are also more likely to react with unintended biological targets, human and ecological, resulting in unwanted adverse effects.

Goals of Green Chemistry

Introduce better use of available resources for the development of a chemical process.

In preparation of any chemicals, waste generated should be reduced.

Toxic reagents and products should be replaced with others that have the same properties and applications but have less impact on the environment.

Encourage all necessary actions to use chemicals compatible with sustainable development.

Use of renewable materials rather than depletable ones. Renewable materials often include agricultural products or the wastes of other processes on the other side source of depletable feedstocks are often fossil fuels (petroleum, natural gas, or coal) or mining operations.

Manufacture of computer chips needs many chemicals and fossil fuels but scientists have replaced them with supercritical carbon dioxide in one of the steps of chip preparation, and it significantly reduces the quantities of chemicals, energy, and water needed to produce chips.

Pharmaceutical industries is continually seeking options to develop medicines with less harmful side-effects and using processes that produce less toxic waste.

Conclusion

It is better to prevent waste than to treat or clean up waste after it has been created.

References

1. Lewandowski TA (2014) Green Chemistry. Encyclopedia Toxicol. 3: 798-799.