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"GREEN CHEMISTRY" THE EARTH SAVING SCIENCE

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Abstract:
The new branch emerge out in the chemistry subject i.e. green chemistry. The primary concept of green chemistry is the design and developed the chemical process in such way that where minimize the production of waste. In this article provides the insights of principle, concept of green chemistry for saving the earth by developing such kind of chemical methods where less hazardous chemical compound use and less production of waste.

Key Words: Green chemistry, Environments, Waste.

Introduction:

Chemistry is the branch of science which deals with study of synthesis, properties of matters. For increasing the high standard living in society, chemistry play important role such as development in the pharmaceutical branch an improvement in health & extended life of humans, fertilizers increases the productivity of foods, semiconductors useful in all electronic gadgets. During this chemistry go in wrong direction such as releasing in large amount of pollutants, toxic substances, non-biodegradable materials which causes harmful effect on environments and ultimately on living life. Due to this large adverse effect observe on the earth which change the resource sustainability, so the time was come we have not create new place on the earth but we minimize or reducing the production toxic materials. The first attempt was made by Green chemistry, it may specify as " In the synthetic chemical processes such kind of manufacture methods design and develop for sustainable, safe & non-polluting and where minimum amount of energy & materials used while producing no or little waste materials." The goal of green chemistry is to rework or redesign chemical synthetic products or methods where less amount of waste was generated and stop the production of dangerous materials.

Concept of Green chemistry:

The green chemistry doesn't resemble with environmental Chemistry,
Because environmental chemistry concentrate on study pollutant chemicals and their effect on nature, green chemistry concentrate on reduction of pollution by attempting design chemical products and processes. Green chemistry also known as sustainable chemistry due to we don't have create, produces the new synthetic methods. Here think about synthetic methods develop by naturally occurring material, biocatalyst and minimize the production of toxic material and waste. There are three main regard in which green chemistry is sustainable:

A] Economic: The production cost must be less as compare to normal practice carried out in chemical industries.

B] Materials: The materials used must have efficiency for maximum recycling and minimum used of raw material.

C] Waste: In chemical process the production of waste must be less percent or total elimination of waste production.

In the program organised by the US Environmental Protection Agency (EPA) for start the planning of sustainable development in the field chemistry where Paul T. Anastas first time pronounced the word Green Chemistry. For explaining any new concept require some rules, Anastas and Warner put forward a set of principle & they are twelve number. This rules are the directive principle for those which are involve in an implementing the green chemistry.

BASIC PRINCIPLES OF GREEN CHEMISTRY

1. Prevention: Try to stop the production of waste product.

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2. Atom Economy: To develop such kind of synthetic methods where production of final product should be maximize.

3. Less Hazardous Chemical Synthesis: During chemical synthesis it should be design in manner to use and generate substances which have less toxicity.

4. Designing Safer Chemicals: Develop chemical compounds which show desired function with minimum toxicity.

5. Safer Solvents and Auxiliary: During reaction if possible don't use supplementary reagents.

6. Design for Energy Efficiency: Design and develop chemical processes where minimum use energy consumption.

7. Use of Renewable Feed stocks: Try to use the raw materials or feed stocks should be renewable.

8. Reduce Derivatives: Try to avoid the derivatization in chemical processes.

9. Catalysis: Try to use selective catalytic reagents in chemical processes.

10. Design for Degradation: In chemical method try to design such kind of product which may easily degradable.

11. Actual-time analysis for pollution prevention: Developing the analytical technique to monitoring actual time of chemical methods and control the formation of unwanted waste materials.

12. Development of chemistry for Accident prevention: Design and develop the chemical methods for the reactant and product should be minimum production of accidents like explosions & fires.

Conclusion:

Green Chemistry is new philosophical path for maintain depletion of environment condition on the earth. There is more effort is required to convey the message for the applicability of green chemistry to the chemical industries by designing and develop ideal process for producing non-polluting materials. This article gave simple understanding of green chemistry for the students who want to involve in training and education of sustainable environment.

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