

Organic Chemistry: An Overview

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Abstract

Organic chemistry is the study of carbon-containing molecules' structure, characteristics, content, reactions, and manufacture. The most common elements in organic compounds are carbon and hydrogen, although they can also contain a variety of other elements (e.g., nitrogen, oxygen, halogens, phosphorus, silicon, sulfur). Organic chemistry was once limited to the study of molecules created by living organisms, but it has since expanded to encompass human-made substances (e.g., plastics).

Introduction

Organic substances can be found all over the place. Organic chemicals make up at least a portion of many modern materials. They're essential for economic development and are at the heart of biochemistry, biotechnology, and medicine. Organic compounds can be found in agrichemicals, coatings, cosmetics, detergent, dyestuff, food, fuel, petrochemicals, pharmaceuticals, plastics, and a variety of other places.

Organic chemistry is the source of almost all biotechnology (“biotech”) products. Biotechnology is the application of living organisms and bioprocesses to the creation or modification of products for a specific purpose. A biotech corporation might, for example, create disease-resistant seeds or drought-resistant plants.

Biotechnology jobs can be found in a variety of fields, including: Health care, Crop harvesting, Crops for non-food purposes, Goods for consumers (e.g., biodegradable plastics, vegetable oil), the environmental industry and biofuels.

Organic chemistry is used in the majority of consumer items. Take, for example, the cosmetics sector. Organic chemistry investigates how the skin reacts to metabolic and environmental conditions, and chemists create solutions to address these issues.

Organic industrial chemistry focuses on turning basic materials (e.g., oil, natural gas, air, water, metals, and minerals) into consumer and industrial products, which is critical to modern world economies.

Organic industrial chemistry nowadays is primarily dependent on petroleum and natural gas.

Because these are scarce raw materials, much of the industry's attention is focused on figuring out how to turn renewable resources (such as plants) into industrial organic compounds.

The pharmaceutical sector creates, manufactures, and distributes pharmaceuticals for human and animal use. Some pharmaceutical firms specialise in brand-name (i.e., a product with a trademark that can only be manufactured and sold by the company that owns the patent) and/or generic drugs (i.e., chemically equivalent, lower-cost version of a brand-name drug) pharmaceuticals and medical devices (agents that act on diseases without chemical interaction with the body).

In terms of patenting, testing, safety assurance, efficacy, monitoring, and marketing, pharmaceuticals (both brand name and generic) and medical devices are subject to a variety of country-specific laws and regulations.

Agencies such as the Food and Drug Administration and the Patent and Trademark Office, as well as state and local governments, employ organic chemists in the above-mentioned disciplines.