



## Recommended for You



10 Nutrients That Shrink Your Belly - For Dummies



10 Healthy Food Swaps for Losing Weight - For Dummies



Forget Googling them, this site reveals all. Simply enter a name and state of anyone you know, Promoted by TruthFinder



You Should Stop Paying \$300 For Prescription Glasses Promoted by GlassesUSA

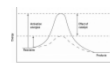
Recommended by



Chemistry Concepts: Energy Levels and Orbitals



How to Calculate Partial Pressures Using Dalton's Law



How Temperature, Concentration, and Catalysts Influence Chemical Reaction Rates

# What Chemists Do and Where They Work

Most chemists operate in two worlds of work. One is the macroscopic world that you see, feel, and touch. Chemists also operate in the microscopic world that you can't directly see, feel, or touch.

- The *macroscopic* world involves lab coats — weighing out things like sodium chloride to create things like hydrogen gas. This is the world of experiments.
- In the *microscopic* world, chemists work with theories and models. They may measure the volume and pressure of a gas in the macroscopic world, but they have to mentally translate the measurements into how close the gas particles are in the microscopic world.

## Pure versus applied chemistry

In *pure chemistry*, chemists are free to carry out whatever research interests them — or whatever research they can get funded. There is no real expectation of practical application at this point. The researcher simply wants to know for the sake of knowledge.

In *applied chemistry*, chemists normally work for private corporations. Their research is directed toward a very specific short-term goal set by the company — product improvement or the development of a disease-resistant strain of corn, for example.

Normally, more money is available for equipment and instrumentation with applied chemistry, but there's also the pressure of meeting the company's goals.

## What does a chemist do all day?

You can group the activities of chemists into these major categories:

- **Chemists analyze substances.** They determine what is in a substance, how much of something is in a substance, or both. They analyze solids, liquids, and gases. They may try to find the active compound in a substance found in nature, or they may analyze water to see how much lead is present.
- **Chemists create, or synthesize, new substances.** They may try to make the synthetic version of a substance found in nature, or they may create an entirely new and unique compound. They may try to find a way to synthesize insulin. They may create a new plastic, pill, or paint. Or they may try to find a new, more efficient process to use for the production of an established product.
- **Chemists create models and test the predictive power of theories.** This area of chemistry is referred to as theoretical chemistry. Chemists who work in this branch of chemistry use computers to model chemical systems. There is the world of mathematics and computers.

- **Chemists measure the physical properties of substances.** They may take new compounds and measure the melting points and boiling points. They may measure the strength of a new polymer strand or determine the octane rating of a new gasoline.

## Where do chemists actually work?

You may be thinking that all chemists can be found deep in a musty lab, working for some large chemical company, but chemists hold a variety of jobs in a variety of places:

- **Quality control chemist:** These chemists analyze raw materials, intermediate products, and final products for purity to make sure that they fall within specifications. They may also offer technical support for the customer or analyze returned products. Many of these chemists often solve problems when they occur within the manufacturing process.
- **Industrial research chemist:** Chemists in this profession perform a large number of physical and chemical tests on materials. They may develop new products, and they may work on improving existing products. They may work with particular customers to formulate products that meet specific needs. They may also supply technical support to customers.
- **Sales representative:** Chemists may work as sales representatives for companies that sell chemicals or pharmaceuticals. They may call on their customers and let them know of new products being developed. They may also help their customers solve problems.
- **Forensic chemist:** These chemists may analyze samples taken from crime scenes or analyze samples for the presence of drugs. They may also be called to testify in court as expert witnesses.
- **Environmental chemist:** These chemists may work for water purification plants, the Environmental Protection Agency, the Department of Energy, or similar agencies. This type of work appeals to people who like chemistry but also like to get out in nature. They often go out to sites to collect their own samples.
- **Preservationist of art and historical works:** Chemists may work to restore paintings or statues, or they may work to detect forgeries. With air and water pollution destroying works of art daily, these chemists work to preserve our heritage.
- **Chemical educator:** Chemists working as educators may teach physical science and chemistry in public schools. They may also teach at the college or university level. University chemistry teachers often conduct research and work with graduate students.

These are just a few of the professions chemists may find themselves in. Chemists are involved in almost every aspect of society — including law, medicine, technical writing, governmental relations, and consulting.

---

## Recommends

- [Practice Math Questions for Praxis: Solving Algebraic Verbal Problems](#)
- [ACT Practice Math Questions: Geometric Sequences](#)
- [Practice Math Questions for Praxis: Complementary and Supplementary Angles](#)
- [Practice Math Questions for Praxis: Number Order](#)
- [Practice Math Questions for Praxis: Solving Algebraic Expressions Using Substitution](#)
- [Vegetables That Boost Your Immune System - For Dummies](#)
- [Seven Things Never to Include on Your Resume - For Dummies](#)
- [How to Score Your Hand in Cribbage - For Dummies](#)
- [Nine Recipes to Ward Off Belly Fat - For Dummies](#)
- [Employee Appraisal Phrases: Job Knowledge and Expertise - For Dummies](#)

## Promoted Stories From Around The Web

### Sponsored Content