Chemist

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Job Description:

Chemists search for new knowledge and use existing knowledge about chemicals.

Gross Monthly Income:

$5,600

Wages:

Average median yearly pay is about $68,000 a year in Utah.

Schedule: Generally work a regular work week, office hours. May work longer hours to complete deadlines.

Advancement:

In government or industry, beginning chemists with a bachelor's degree usually work in quality control or testing. In addition, they assist senior chemists in research labs. With additional education, chemists may advance to more demanding positions. Advancement is more likely for chemists who have advanced degrees. Chemists with a Ph.D. and experience can lead basic research. Also, a Ph.D. is often required for advancement to management positions.

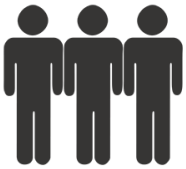
Education & Experience:

- Completed High School
- Bachelor's degree Chemistry
- Master's Degree in Chemistry

High School Courses:

- Chemistry
- Physics
- Biology
- Mathematics
- Probability and Statistics

Job Outlook:



Medium

Work Conditions:

- Work as part of a research or analytical team
- Always work indoors in laboratories or offices
- Often exposed to contaminants or hazardous conditions
- Work in a highly competitive environment.
- Sit or stand for long periods of time.
- Need to be good at reasoning and problem solving.

Travel: None

Hours a Week:

45

Leisure Time:

Medium

Knowledge:

- Chemistry
- Mathematics
- Computers & Electronics
- English Language
- Production & Processing
- Clerical
- Customer & Personal Service
- Engineering & Technology

Source: Utahfutures.org, 2013. Adapted from *The Real Game* by Bill Barry

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Overview

Did you know that boiling an egg is basically an "act" of chemistry? By submerging the egg in hot water, the egg changes from a liquid to a solid. (Or semi-solid, if you like soft-boiled eggs.)

Chemists study the properties of matter. They prepare test solutions to study how chemicals combine. They observe how substances react to heat, light, or other chemicals. They analyze compounds to learn their physical and chemical makeup. Chemists use computers to compile and analyze the results of their research. They often consult with other scientists about research and test results. In addition, chemists write technical reports or papers.

Chemists work for many different types of companies. Chemists who do basic research study the structure of matter. As a result, chemical research has spurred advances in medicine and farming. Chemists who work in applied research use knowledge gained from research to create new products or processes. For example, chemists create new synthetic fibers, cosmetics, and drugs. They also develop new processes that save energy or reduce pollution, such as improved oil refining. Chemists use complex lab instruments for their research. In most work settings, they direct and advise other staff in test procedures.

Chemists also work in quality control in manufacturing plants. For example, they might work for a company that produces paint. Chemists prepare instructions for plant workers that specify ingredients, temperatures, and mixing times. They monitor automated processes. In addition, chemists test samples of products or raw materials to be sure they meet government standards. They make sure that waste products do not exceed pollution limits.

Chemists often specialize in a subfield of chemistry. For example, organic chemists study the carbon compounds that make up all living things. They create new compounds that become new products, such as plastics or drugs. Inorganic chemists study non-carbon compounds, such as those in electronic components. Physical chemists study chemical reactions. They may develop new and better energy sources.

Pathway:
Technology & Engineering

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