

Occupational Profile

Chemists

WHAT THEY DO

Conducts chemical analyses and experiments in laboratories to expand knowledge of chemical processes, develop new products, improve existing products, or to establish quality or process control. Uses computers to record and analyze data. Belongs to the Science, Technology, Engineering and Mathematics cluster and Science and Mathematics pathway.



IS THIS FOR YOU?

Work Interests are described in the following categories (compatible with Holland's Model) by people who tend to succeed in this career:

- **Investigative** – You are a "thinker". When you have a problem, you like to analyze it and look at different ways to solve it. You like to work by yourself, and you don't like explaining your ideas to other people.
- **Realistic** – You are a "doer". You like physical activities and projects. You like to find the answers to problems by doing hands-on work instead of talking about solutions.

Work Values are aspects of work that are satisfying to you. The following work values are generally associated with this career.

- **Achievement** – It's very important to you that your work allows you to use your best abilities. You want to see the results of your work and get a feeling of accomplishment.
- **Independence** – It's very important to you that your work allows you to make decisions on your own. You want to try out your own ideas and work with little supervision.

Aptitudes reflect a person's ability to acquire skills and knowledge. The following aptitudes are important for success in the career:

- **General Learning Ability**
- **Verbal Aptitude**
- **Numerical Aptitude**
- **Spatial Perception**
- **Form Perception**

Additional skills for this occupation may be found at <http://www.iowaworkforce.org/pubs/careers/cps> .

SKILLS YOU NEED

Basic Skills:

- Reading Comprehension
- Active Listening
- Writing
- Speaking
- Mathematics
- Science
- Critical Thinking
- Active Learning
- Monitoring

Transferable Skills (applicable in other careers): High level

- Analyzing and interpreting physical science data
- Creating design concepts for products and processes
- Explaining physical science concepts
- Handling and/or testing chemicals
- Operating computers to record and analyze physical science data
- Researching physical sciences
- Working as a member of a physical science team

Workplace Skills:

High level

- Complex Problem Solving
- Coordination
- Equipment Selection
- Instructing
- Quality Control Analysis
- Time Management

Medium level

- Equipment Maintenance
- Judgment and Decision Making
- Management of Financial Resources
- Management of Material Resources
- Negotiation
- Operation and Control
- Operation Monitoring
- Operations Analysis
- Persuasion
- Service Orientation
- Social Perceptiveness
- Systems Analysis
- Systems Evaluation

Source: <https://secure.ihaveaplaniowa.gov/>

ESTIMATED & PROJECTED EMPLOYMENT

Occupational Title	2010 Estimated Employment	2020 Projected Employment	2010-20 Employment Change	Annual Growth Rate (%)	Total Annual Openings
Total All Occupations	1,717,020	1,948,700	231,680	1.3	64,525
Life, Physical, & Social Science Occupations	11,655	13,080	1,420	1.2	510
Chemists	465	505	40	0.9	20

Source: <http://iwin.iwd.state.ia.us/pubs/statewide/stateoccproj.pdf>

2012 WAGE & SALARY (\$)

Occupational Title	Average Wage	Average Salary	Entry Wage	Entry Salary	Experienced Wage	Experienced Salary
Total All Occupations	18.90	39,295	9.30	19,341	23.69	49,272
Life, Physical, & Social Science Occupations	26.24	54,567	15.74	32,739	31.48	65,482
Chemists	32.53	67,654	22.11	46,002	37.74	78,480

Source: <http://iwin.iwd.state.ia.us/pubs/statewide/stateoccproj.pdf>

EDUCATION & TRAINING

Education	Work Experience	Job Training
Bachelor's Degree	None	None

A bachelor's degree in chemistry or a related discipline is usually the minimum educational requirement for entry-level chemist jobs. However, many research jobs require a master's degree, or more often a PhD.

Source: <http://iwin.iwd.state.ia.us/pubs/statewide/stateoccproj.pdf> and <https://secure.ihaveaplaniowa.gov/>

NATIONAL CAREER READINESS CERTIFICATE (NCRC)

Skill	Median Skill Level
Applied Mathematics	n.a.
Locating Information	n.a.
Reading for Information	n.a.

This ACT-developed credential demonstrates achievement and a certain level of workplace employability skills. The greater the score, the greater the skill level (Bronze = 3, Silver = 4, Gold = 5, Platinum = 6).

Source: <http://www.act.org/workkeys/analysis/occup.html>



PRIMARY INDUSTRY SECTORS

(Where are Chemists Employed?)

Chemical Mfg
Educational Services
Food Mfg
Professional, Scientific, and Technical Services

Source: <http://iwin.iwd.state.ia.us/pubs/statewide/stateoccproj.pdf>

ADDITIONAL SOURCES:

This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Revisions and/or corrections made when necessary. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit <http://iwin.iowaworkforce.org/> to obtain the latest workforce data and trends including this document under the **Publications** tab. Published 10/2013.