

Chemists

Description

Chemists conduct research and analysis in support of industrial operations, product and process development, quality control, environmental control, medical diagnosis and treatment, biotechnology, nanotechnology and other applications. They also carry out theoretical, experimental and applied research into basic chemical and biochemical processes to create or synthesize new products and processes. Chemists are employed in research, development and quality control laboratories; chemical, petrochemical and pharmaceutical industries; mineral, metal and pulp and paper industries; and a wide variety of manufacturing, utility, health, educational and government establishments.

Duties:

- Analyze, synthesize, purify, modify and characterize chemical or biochemical compounds
- Develop and conduct analysis programs to ensure quality control of raw materials, intermediates or final products
- Conduct programs of sample and data collection and analysis to identify and quantify environmental toxicants
- Carry out research to develop new chemical formulations and processes, and to evaluate new products
- Investigate the synthesis and properties of chemical compounds and the mechanisms of chemical reactions
- Examine chemical aspects of drug action, disease diagnosis and treatment, and health assessment
- Work with chemical engineers, biologists, agronomists, geologists or other professionals on interdisciplinary research and development projects
- Act as technical consultant in a particular field of expertise
- Possibly supervise other chemists and chemical technicians and technologists.

Other titles:

- Agricultural chemist
- Medicinal chemist
- Food chemist
- Analytical chemist

(Government of Canada National Occupation Classification)

Skills

Critical thinking	Mathematics	Problem solving	Writing	Quality control and assurance	Systems analysis
	Equipment maintenance	Coordination	Time management	Persistence	

Education/Training Requirements

Ontario Secondary School Diploma (OSSD)

- University programs in Ontario require an OSSD or Mature Student Status

Post-secondary diploma/degree

- Bachelor's degree in chemistry, biochemistry, or a related discipline
- Master's or doctoral degree is required for employment as a research chemist

Certification

- Licensing by the Ontario Association of Chemists is optional

Potential Earnings in Durham Region

The average and median wages and salaries for individuals employed as chemists are as follows. Place of Residence (POR) is defined as individuals who reside within the Durham Region. Place of Work (POW) is defined as individuals who are employed within the Durham Region.

Median Wages and Salaries (POR)	Average Wages and Salaries (POR)	Median Wages and Salaries (POW)	Average Wages and Salaries (POW)
\$60,003	\$64,142	\$64,465	\$70,367

Employment Prospects

Industry (NAICS)	Jobs in Durham Region (POW)	Durham Region Residents Employed (POR)
3254 Pharmaceutical and medicine manufacturing	40	55
5417 Scientific research and development services	30	15

(Ministry of Advanced Education and Skills Development 2016 data in Durham Workforce Authority's 2017 Sector Report)

Additional Resources

- Association of the Chemical Profession of Ontario: <https://www.acpo.on.ca/>