



# Spotlight on Chemical and Process Technologists and Technicians



Chemical and Process Technologists and Technicians focus on industrial processes that convert raw materials into petroleum products. They run production units, help design operations, implement process controls and address corrosion concerns. They also research new products and technologies as well as environmental and reclamation techniques that keep the industry on the leading edge.

Imagine working with a Chemical Engineer to design a distillation, separation or mixing process and then putting it to use. Perhaps you would be interested in working at an upgrader that converts bitumen into synthetic crude. Maybe you would operate equipment at a gas plant that extracts moisture, contaminants, hydrogen sulfide and carbon dioxide from natural gas. Alternatively, you could work behind the scenes in a lab researching the latest techniques or doing quality control tests on samples.

Do you like the investigative nature of lab work? Could you see yourself operating equipment in a high-tech petroleum plant? Does Chemistry intrigue you? If so, working as a Chemical and Process Technologist or Technician could be the perfect career for you!



Separators used in bitumen production. Photo courtesy of Syncrude Canada Ltd.



## What do Chemical and Process Technologists and Technicians do?

**Chemical and Process Technologists and Technicians** work in production, engineering design, corrosion control, laboratory analyses and research. Examples of key jobs in this occupation include:

- **Process Technicians:** Operate, monitor, adjust, maintain and troubleshoot processing units. They participate in process start-ups and shut-downs. They also sample products, perform tests, record data and maintain logs of operating conditions.
- **Corrosion Specialists:** Contribute to the design, implementation and improvement of cathodic protection programs. They investigate corrosion failures and recommend improvements.
- **Laboratory Technicians or Quality Control Technologists:** Conduct chemical analyses on air, water, soil and oil. They ensure quality control on chemical products used by the industry.
- **Chemical Specialists:** Research new or improved products and technologies for oil and gas recovery, surface separation and production or environmental management.



## How do I become a Chemical and Process Technologist or Technician?

At minimum, you will need a two or three year diploma from a recognized technical institute.

*Chemical Engineering and Industrial Chemistry Technology* programs will prepare you to work alongside engineers in production facilities. Areas of study include chemical engineering fundamentals, design calculations, unit operations, process simulation, analytical techniques, statistics and computer applications.

*Chemical Technology* programs will prepare you to work alongside professional chemists and researchers. You will learn about laboratory techniques, chemical instrumentation, fundamental chemical principles, research, and quantitative analysis.

Graduates may be granted certification by provincial associations of the Canadian Council of Technicians and Technologists (CCTT). Certification usually requires a minimum two years of experience after graduation. To check out the associations, visit the CCTT website at: [www.cctt.ca](http://www.cctt.ca).





## What are the working conditions like?

Jobs in production operations are based at plant and field locations. Shift work, overtime and on-call rotations may be required. Training in hydrogen sulphide safety and first aid certification may be required. Some roles are considered 'safety sensitive' and require rigorous pre-employment medical and drug/alcohol assessments. Alternatively, work may be performed in a main lab or in a large field laboratory in a production facility, at a supplier facility or in an environmental laboratory. Safety protocols are strictly adhered to.



*New product research. Photo courtesy of the Alberta Research Council.*



## Do I fit the bill?

**Do you think you have what it takes to become a Chemical Process Technologist or Technician?**

- I am interested in chemistry, mathematics, physics and science.
- I like to do experiments and lab work.
- I am interested in understanding and presenting scientific data.
- I am interested in engineering principles.
- I enjoy figuring out calculations and diagrams.
- I pay special attention to detail and accuracy and am not easily distracted.
- I enjoy problem solving and finding solutions.
- I am a great multi-tasker.
- I believe that applying proper procedures, standards, codes and policies is very important.
- I am quite versatile and can work on my own or with a team.
- I have well developed communication and computer literacy skills.
- I am capable of working with potentially hazardous materials and equipment with the right training.
- I can work rotational shifts and long hours.
- I believe that I have what it takes to be an excellent Chemical and Process Technologist or Technician!



## Quick tips and next steps!

- Visit career fairs and talk to employers who offer jobs and careers in this occupation. Check with employment centres, educational institutions, newspapers, petroleum-related magazines and the internet for information on career fairs.
- While in high school, sharpen your skills and knowledge in areas such as mathematics, chemistry, physics and computer science.
- Participate in *National Technology Week* which is held annually during November and offers a host of activities along with interactive and fun resources to help students, teachers and parents explore technical careers. See details at: [www.cctt.ca](http://www.cctt.ca).
- Check out websites of industry and professional associations such as the Canadian Council of Technicians and Technologists at [www.cctt.ca](http://www.cctt.ca).

## Want more info?

For information on other industry occupations check out [www.careersinoilandgas.com](http://www.careersinoilandgas.com).