

EDUCATION & EXPERIENCE

- ▶ A bachelor's degree in metallurgical, materials, ceramic or chemical engineering or in a related engineering discipline is required. Some companies may require a master's degree or doctorate in a related engineering discipline.
- ▶ Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practise as a Professional Engineer (P.Eng.).
- ▶ Supervisory and senior positions in this unit group require experience.

TRAINING

Universities across Canada offer many different engineering programs. If you are interested in a career in mining, talk to a university program advisor about the best course for you to take.

CAREER ADVANCEMENT POTENTIAL

- ▶ There is considerable mobility between engineering specializations at the less senior levels.
- ▶ Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practise in associated areas of science, engineering, sales, marketing or management.
- ▶ Metallurgical and materials engineers work closely with other scientists and engineers, and mobility is possible between some fields of specialization.

To learn more about a career as a metallurgical and materials engineer (including information about work duties and working conditions, salaries and employment prospects), you can access information in the National Occupation Classification (NOC) System at www.workbc.ca. The NOC code for this occupation is 2142.

METALLURGICAL & MATERIAL ENGINEERS

Metallurgical and materials engineers conduct studies of the properties and characteristics of metals and other non-metallic materials. They also plan, design and develop machinery and processes to concentrate, extract, refine and process metals, alloys, and other materials such as ceramics, semiconductors and composite materials. Metallurgical and materials engineers are employed in consulting engineering firms, mining, metal processing and manufacturing companies, and in government, research and educational institutions.



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JOB DESCRIPTION

If you're a metallurgical or materials engineer, you perform some or all of the following duties.

- ▶ Conduct studies and design, develop and specify the processes and machinery to concentrate, extract, refine and process metals from ores.
- ▶ Conduct studies on the properties and characteristics of materials and design, develop and specify processes for moulding, shaping, forming and thermal treatment of metals, alloys and metallic systems, ceramics, semiconducting and other materials.
- ▶ Conduct chemical and physical analytical studies, failure analyses and other studies and recommend material selection, design of materials, corrosion and control measures, operational testing and other procedures.
- ▶ Co-ordinate production testing and control of metal refining, smelting or foundry operations or non-metallic materials production operations.
- ▶ Supervise technologists, technicians and other engineers and scientists.

Seabridge Gold developed its job fact sheets using information from Human Resources and Skills Development Canada's 2006 National Occupation Classification, Work BC (www.workbc.ca) and the Mining Industry Human Resource Council (<https://mihrc.ca>). To learn more about Seabridge Gold and its projects, visit www.seabridgegold.com.