

CAREER FACT SHEET

Engineers (Chemical and Material)

Snapshot

Chemical and Materials Engineers design and prepare specifications for chemical process systems and the construction and operation of commercial-scale chemical plants, supervise industrial processing and fabrication of products undergoing physical and chemical change, and investigate the properties of metals, ceramics, polymers and other materials and assess and develop their engineering and commercial applications.

How many are employed in this occupation?	7,000
What are the average weekly earnings for full time workers?	\$2,062
How does unemployment compare with other occupations?	Above Average
What are the job prospects for this occupation?	Medium
What will be the likely future employment growth for the next five years?	Moderate Growth

Main employing industries

Manufacturing; Professional, Scientific and Technical Services; Electricity, Gas, Water and Waste Services; Mining

Tasks

This occupation may include associated occupations with varying tasks.

- preparing designs for chemical process systems and planning control systems for processes such as those used to remove and separate components, effect chemical changes, test and evaluate fuels, transfer heat, and control the storing and handling of solids, liquids and gases
- monitoring the operation and maintenance of equipment to achieve maximum efficiency under safe operating conditions
- ensuring correct materials and equipment are used and that they conform to specifications
- diagnosing malfunctions in chemical plants and instituting remedial action
- studying product utilisation and pollution control problems
- reviewing plans for new products and submitting material selection recommendations in accordance with design specifications and factors such as strength, weight and cost
- planning and implementing laboratory operations to develop new materials and fabrication procedures for new materials to fulfil production cost and performance standards
- conferring with producers of materials, such as metals, ceramics, polymers, cements and elastomers, during the investigation and evaluation of materials suitable for specific product applications
- reviewing product failure data and implementing laboratory tests to establish or reject possible causes, and advising on ways to overcome any problems

INDUSTRY OVERVIEW

Manufacturing

If you're a hands on sort of person who likes getting stuck into tasks involving the use of tools and machinery to create new items, or you like to work on projects that bring technical concept drawings to life, then a career in the Manufacturing industry could be right up your alley. Careers in Manufacturing are available in a variety of industries such as: aerospace, furnishing, laboratory operations, metal fitting, engineering and boating, process manufacturing, mineral products, plastics, rubber, recreational vehicles and textiles, clothing and footwear. Structural Steel and Welding Trades workers, and Metal Fitters and Machinists are the trades most in demand in Manufacturing at present. There are thousands of Manufacturing businesses in Australia, employing almost one million people. New developments in sustainable Manufacturing aim to produce goods in an environmentally friendly and sustainable way while at the same time maintaining, if not improving productivity. This makes it a very interesting time to join this sector.



Manufacturing

Possible job pathways

- Glaziers
- Graphic Pre-press Trades Workers
- Industrial Spraypainters
- Metal Fitters and Machinists
- Precision Metal Trades Workers
- Sheetmetal Trades Workers
- Structural Steel and Welding Trades Workers
- Wood Machinists and Other Wood Trades Workers
- Chemical, Gas, Petroleum & Power Plant Operators
- Electrical Engineering Draftspersons, Technicians
- Electricians
- Electronics Engineers
- Metal Casting, Forging & Finishing Trades
- Aircraft Maintenance Engineers
- Engineering Production Systems Workers
- Engineers (Chemical and Material)
- Industrial, Mechanical and Production Engineers
- Mechanical Engineering Draftspersons, Technicians
- Food and Drink Factory Workers
- Production Managers
- Printers
- Printing Assistants and Table Workers
- Signwriters
- Jewellers
- Product Assemblers

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