

Chemists and Materials Scientists

SOC: 19-2030 • Career Profile Report

■ Key Facts

\$86,620 Median Salary	95,500 Employment	+5.0% Growth Rate
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■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 8.0% probability of being automated in the next 10-20 years.
This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.5/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	6.2/10	Investigative	9.4/10
Artistic	5.6/10	Social	6.4/10
Enterprising	4.8/10	Conventional	6.4/10

■ Top Skills Required

Analytical skills, Communication skills, Interpersonal skills, Math skills, Organizational skills, Perseverance, Problem-solving skills, Time-management skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Chemists and Materials Scientists typically perform the following tasks:

- Conduct research on the structures and properties of materials, such as metals, alloys, polymers, and ceramics, to obtain information that could be used to develop new products or enhance existing ones.
- Test metals to determine conformance to specifications of mechanical strength, strength-weight ratio, ductility, magnetic and electrical properties, and resistance to abrasion, corrosion, heat, and cold.
- Test material samples for tolerance under tension, compression, and shear to determine the cause of metal failures.
- Determine ways to strengthen or combine materials or develop new materials with new or specific properties for use in a variety of products and applications.
- Prepare reports, manuscripts, proposals, and technical manuals for use by other scientists and requestors, such as sponsors and customers.
- Plan laboratory experiments to confirm feasibility of processes and techniques used in the production of materials with special characteristics.
- Recommend materials for reliable performance in various environments.
- Supervise and monitor production processes to ensure efficient use of equipment, timely changes to specifications, and project completion within time frame and budget.
- Research methods of processing, forming, and firing materials to develop such products as ceramic dental fillings, unbreakable dinner plates, and telescope lenses.
- Perform experiments and computer modeling to study the nature, structure, and physical and chemical properties of metals and their alloys, and their responses to applied forces.
- Devise testing methods to evaluate the effects of various conditions on particular materials.
- Test individual parts and products to ensure that manufacturer and governmental quality and safety standards are met.
- Confer with customers to determine how to tailor materials to their needs.
- Visit suppliers of materials or users of products to gather specific information.
- Write research papers for publication in scientific journals.
- Teach in colleges and universities.
- Review and select materials for products to meet product design and cost requirements.

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Source: <https://www.bls.gov/ooh/life-physical-and-social-science/chemists-and-materials-scientists.htm>