Chemists and Materials Scientists

SOC: 19-2030 • Career Profile Report

■ Key Facts

$86,620	95,500	+5.0%
Median Salary	Employment	Growth Rate

■ 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 conduct **research and experiments to analyze substances, develop new materials, and improve chemical processes**. They study the composition, properties, and reactions of matter to advance science and technology. Their work is critical in pharmaceuticals, manufacturing, environmental science, and materials development.

This career is well suited for individuals who enjoy scientific research, problem-solving, and innovation.

What Do Chemists and Materials Scientists Do?

These professionals analyze materials, conduct experiments, and develop solutions for practical and industrial applications.

Common responsibilities include:

- Conducting laboratory experiments to study chemical properties and reactions
- Developing and testing new materials for strength, durability, or chemical resistance
- Analyzing data and interpreting results to inform research or production
- Ensuring safety and compliance with laboratory and industry standards
- Preparing technical reports, research papers, and documentation
- Collaborating with engineers, scientists, and industrial teams
- Evaluating materials for quality control and product development

Key Areas of Chemistry and Materials Science

Chemists and materials scientists may specialize in particular materials, industries, or applications:

- Pharmaceutical Chemistry: Developing and testing drugs and medical compounds
- Materials Research: Creating polymers, metals, ceramics, or nanomaterials
- Environmental Chemistry: Studying pollution, chemical hazards, and sustainability
- Analytical Chemistry: Performing chemical analyses for research or quality control
- Process Development: Designing and improving chemical manufacturing processes

Skills and Abilities Needed

These professionals combine analytical, technical, and research skills.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

This role typically requires formal education and research experience:

- Bachelor’s Degree (minimum): Chemistry, materials science, or related field
- Master’s or Doctoral Degree (common for research roles): Specialization in chemistry or materials science
- Laboratory Experience: Internships, co-op programs, or research projects
- Professional Development: Training in advanced techniques, software, or equipment
- Continuous Learning: Staying current with scientific research, materials innovations, and industry trends

Where Do Chemists and Materials Scientists Work?

They are employed in organizations that research, develop, and manufacture chemical or material products:

- Pharmaceutical and Biotechnology Companies
- Chemical and Materials Manufacturing Firms
- Research Institutions and Universities

- Environmental and Regulatory Agencies
- Industrial Laboratories and Product Development Centers

Work environments include laboratories, research facilities, manufacturing sites, and offices.

Is This Career Difficult?

This career requires scientific expertise, analytical skills, and precision. Chemists and materials scientists must design experiments, analyze complex data, and maintain safety and quality standards.

Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy scientific research, experimentation, and problem-solving
- Are detail-oriented and analytical
- Can work independently or collaboratively in laboratory settings
- Have strong communication and technical writing skills
- Want a career contributing to innovation in chemistry and materials science

How to Prepare Early

- Take courses in chemistry, physics, mathematics, and materials science
- Participate in laboratory experiments, science fairs, or research projects
- Gain experience through internships or co-op programs
- Develop skills in data analysis, laboratory techniques, and scientific writing
- Explore advanced degree programs or certifications in chemistry or materials science

Chemists and materials scientists advance knowledge and technology by analyzing substances, developing new materials, and improving chemical processes for practical and industrial applications.