

JOB DESCRIPTION: Chemistry in Aerospace

Chemistry Careers in Space Exploration

Space exploration demands the skills of a variety of scientists. Chemists can find a number of career opportunities in the field of space exploration. Often, positions in this field require knowledge of multiple scientific disciplines, so chemists should expect to know or learn about other areas of science. In the United States, NASA is the main organization charged with space exploration, but there are many private companies that are also interested in space that may have need for chemists.

Chemical engineers apply the principles of chemistry, math, and physics to the design and operation of large-scale chemical manufacturing processes. They translate processes developed in the lab into practical applications for the production of products such as plastics, medicines, detergents, and fuels; design plants to maximize productivity and minimize costs; and evaluate plant operations for performance and product quality.

Liquid Propulsion Systems Engineer

Part of space exploration is finding ways to propel objects such as a space shuttle up and out of the earth's orbit. The propulsion system to accomplish such a feat requires very powerful fuel and an engine that is capable of burning such fuel without malfunction. NASA hires aerospace engineers to help design such systems. A degree in chemistry along with a year of experience working on turbo-machinery subsystems qualifies a person for this position at NASA. View a typical NASA job announcement and requirements/qualifications at the link below



: [NASA Job in Mississippi](#)

Aerospace Technology

NASA often considers scientists from all backgrounds for positions in aerospace technology. In such a position, a scientist might engage in research, development, design or testing of the technology needed for successful space travel. A person who graduates from college with honors and a degree in chemistry qualifies for entry-level aerospace technology positions with NASA.

Lunar Geologists

Lunar geologists study moon rocks to learn more about their composition. They also study the surface of the moon and the composition of its core. A lunar geologist often designs experiments for astronauts to perform during a moon landing and may even determine the safest place to land on the moon. He uses chemistry, physics, engineering and mathematics to accomplish his [job](#) duties.

Astronomers

Astronomers require a strong background in chemistry to do their [jobs](#). An astronomer studies distant stars and uses chemistry to determine their composition. She may also use chemistry in the study of molecular clouds in space, also called nebulae. The way an astronomer determines the composition of distant objects is by analyzing the spectral light that the objects emit. From the light spectrum, she can determine the different chemical components in the body she's studying.

At Civil Air Patrol, the volunteer auxiliary of the U.S. Air Force, we're helping develop tomorrow's aerospace workforce.

Education and Training

To enter the field, professionals must have at least a four-year bachelor's degree in chemical engineering that includes course work in physics, math (through differential equations), and computers. A chemical engineer's curriculum is similar to that of a chemist, but also includes course work in engineering-related areas such as heat and mass transfer, thermodynamics, fluid dynamics, process design and control, and electronics. Economics, psychology, and political science help chemical engineers to understand the impact of technology on society. Chemical engineers say that although they learn a lot of theory in the classroom, most of their knowledge of real-world applications is derived from on-the-job training.



Chemistry in Action

Links to more Information click below:

<http://www.usajobs.org/jobs/33586702/Aerospace%20Engineer%20Chemical%20Engineer%20Materials%20Engineer%20Chemist,%20Interdisciplinary.htm>

Polymer Chemistry

http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1188&content_id=CTP_003399&use_sec=true&sec_url_var=region1&uuid=f1380bfe-23c0-4e38-aef3-b0bea5463b22

Courtesy: eHow.com, ACS, NASA, US Army