

541713 Research and Development in Nanotechnology

This U.S. industry comprises establishments primarily engaged in conducting nanotechnology research and experimental development. Nanotechnology research and experimental development involves the study of matter at the nanoscale (i.e., a scale of about 1 to 100 nanometers). This research and development in nanotechnology may result in development of new nanotechnology processes or in prototypes of new or altered materials and/or products that may be reproduced, utilized, or implemented by various industries.

Cross-References. Establishments primarily engaged in--

- Conducting research and experimental development in biotechnology (except nanobiotechnology)--are classified in U.S. Industry 541714, Research and Development in Biotechnology (except Nanobiotechnology);
- Conducting research and experimental development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)--are classified in U.S. Industry 541715, Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology);
- Providing veterinary testing services--are classified in Industry 541940, Veterinary Services;
- Providing physical, chemical, or other analytical testing services (except medical or veterinary), such as acoustics or vibration testing, calibration testing, electrical and electronic testing, geotechnical testing, mechanical testing, nondestructive testing, or thermal testing--are classified in Industry 541380, Testing Laboratories;
- Providing medical laboratory testing for humans--are classified in U.S. Industry 621511, Medical Laboratories; and
- Manufacturing products (e.g., apparel, electronic equipment, automotive equipment) using nanomaterials--are classified in Sector 31-33, Manufacturing, according to the process of the specific product made.

541714 Research and Development in Biotechnology (except Nanobiotechnology)

This U.S. industry comprises establishments primarily engaged in conducting biotechnology (except nanobiotechnology) research and experimental development. Biotechnology (except nanobiotechnology) research and experimental development involves the study of the use of microorganisms and cellular and biomolecular processes to develop or alter living or non-living materials. This research and development in biotechnology (except nanobiotechnology) may result in development of new biotechnology (except nanobiotechnology) processes or in prototypes of new or genetically-altered products that may be reproduced, utilized, or implemented by various industries.

Illustrative Examples:

Cloning research and experimental development laboratories
DNA technologies (e.g., microarrays) research and experimental development laboratories
Nucleic acid chemistry research and experimental development laboratories
Protein engineering research and experimental development laboratories
Recombinant DNA research and experimental development laboratories

Cross-References. Establishments primarily engaged in--

- Conducting research and experimental development in nanotechnology (e.g., nanobiotechnology)--are classified in U.S. Industry 541713, Research and Development in Nanotechnology;
- Conducting research and experimental development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)--are classified in U.S. Industry 541715, Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology);
- Providing physical, chemical, or other analytical testing services (except medical or veterinary), such as acoustics or vibration testing, calibration testing, electrical and electronic testing, geotechnical testing, mechanical testing, nondestructive testing, or thermal testing--are classified in Industry 541380, Testing Laboratories;
- Providing veterinary testing services--are classified in Industry 541940, Veterinary Services;
- Providing medical laboratory testing for humans--are classified in U.S. Industry 621511, Medical Laboratories;
- Manufacturing vaccines, toxoids, blood fractions, and culture media of plant or animal origin (except diagnostic use)--are classified in U.S. Industry 325414, Biological Product (except Diagnostic) Manufacturing; and
- Manufacturing uncompounded medicinal chemicals and their derivatives (i.e., enzyme proteins and antibiotics for pharmaceutical use)--are classified in U.S. Industry 325411, Medicinal and Botanical Manufacturing.