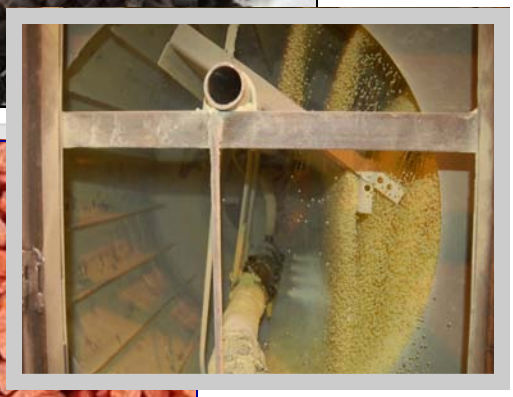
APPLIED CHEMICAL TECHNOLOGY

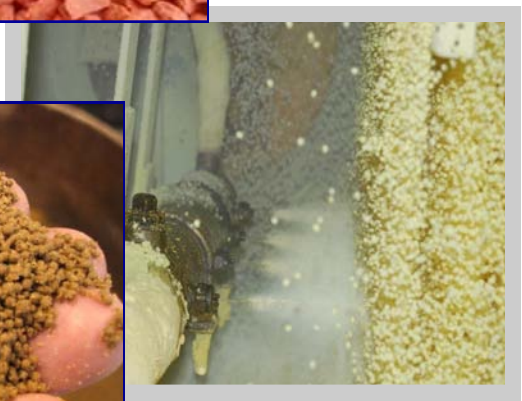
Pilot Plant Services

1-2 tph pilot plant



MAJOR EQUIPMENT LIST

- Drums
- Pans
- Fluid Bed Dryer
- Boilers
- Pellet Mill
- Roll Mill
- Chain Mill
- Hammer Mill
- Evaporator
- Scrubber
- Pumps
- Elevators
- Feeders
- Melters
- Littleford Day Mixer
- Rotex Screen 2 deck
- Sweco Screen 18", 24" and 54"
- Rotary Dryer
- Pipe Reactor
- Coating Drums
- Conveyors
- Fluid Bed Cooler
- Fluid Bed Coater
- Fluid Bed Granulator
- Tanks
- Reactors
- Prill Tower



Applied Chemical Technology, Inc
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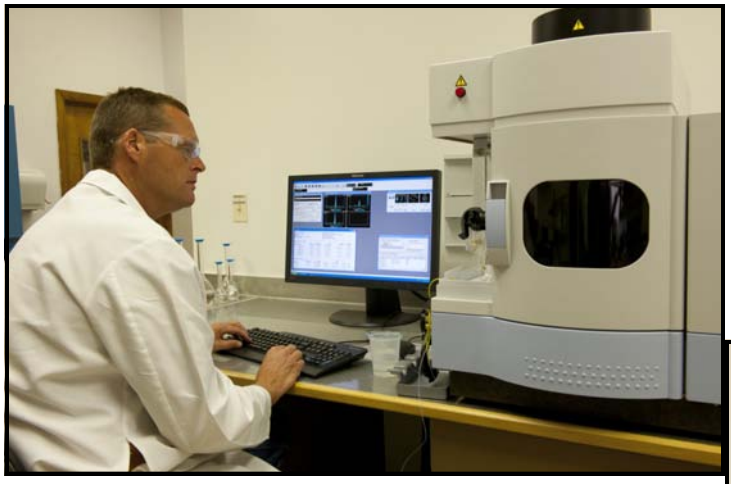
Website: http://www.appliedchemical.com

APPLIED CHEMICAL TECHNOLOGY

Laboratory/Pilot Plant Support Services



PERKIN ELMER 7300 DV ICP-OES

The Perkin Elmer 7300 DV ICP (Inductively Coupled Plasma) provides ACT with the capabilities to analyze more than 73 elements in a sample in a few seconds. This versatile instrument is capable of superior detection limits and true simultaneous measurements of all elements in the available spectral range. With the ICP, ACT can provide our clients with quick, reliable results to assist in laboratory and pilot plant development.

LECO 528 NITROGEN ANALYZER

The LECO 528 nitrogen analyzer provides ACT with the ability to analyze solid and liquid samples for total nitrogen content with a detection limit down to 0.1% nitrogen. This instrument provides quick, reliable analysis of samples in about 3 minutes.

Complete Physical Properties Testing:

ACT's lab is equipped to conduct complete physical properties analysis of granular materials. ACT conducts crush strength, abrasion resistance, sphericity, critical relative humidity, true and apparent density, caking tendency, angle of repose, size analysis (screen method) and other physical properties tests.

- Dust measurements using air classification
- Moisture analysis

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APPLIED CHEMICAL TECHNOLOGY

Laboratory Development Services

Lab Pan Granulator

ACT's laboratory facilities can provide you with quick assessments of process and product development, as well as custom analytical procedures and product quality testing. Our laboratory supports pilot plant operations with scale-up data, chemical analysis, and product quality testing. We can also provide assistance and training for specially developed lab equipment, designed and constructed at ACT. The laboratory at ACT allows clients to test their ideas on a small scale with low cost. The lab is an economic and efficient tool to develop an approach to produce new products or solve current issues within a process.

Our labs include:

- 1100 sq. ft. research lab with separate 425 sq. ft. climate controlled lab room
- 700 sq. ft. research lab with adjacent client offices
- All laboratories may be secured for confidential projects.

LAB EQUIPMENT

- High Temperature Fluid Bed
- Fluid Bed Dryer/Cooler
- Fluid Bed Coater
- Inert Gas Fluid Bed - 100 XP
- Pug Mill Mixer/Granulator
- Rotary Drums
- Pan Granulators
- Pin Mixers
- Prill Pots
- Ovens
- Humidity Chambers
- Furnace
- Fume Hood
- Glove Box for Inert Atmosphere Operations
- Steam Boiler
- Pressure Vessels

300N Lab Fluid Bed

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APPLIED CHEMICAL TECHNOLOGY

Pilot Plant Services

Applied Chemical Technology provides a pilot plant that is specifically designed to test your unique process and production requirements in an accurate, small-scale simulation. This simulation provides process specific data on process efficiency, equipment design, product quality and more. All data is directly scalable to production capacity. An ACT pilot plant will also help reveal unforeseen process challenges, allowing corrections to be made while still in a low cost environment. ACT reports and documents all data collected.

In addition to the test data, our pilot plants can provide product samples for analyses or test markets. During testing, your pilot plant project can also serve as a small-scale training facility for plant operators and supervisors.

Since 1981, ACT has designed and developed pilot plants that provide the required process data for successful scale-ups to commercial manufacturing. With hundreds of completed projects, we are the largest and most innovative engineering company that offers complete lab and pilot plant development services, engineering, design, and the fabrication of equipment for commercial scale plants.

ACT utilizes our pilot plant facilities for a broad range of product and process development activities, including the fertilizer, chemical, bio, pharmaceutical, nutraceutical, and food industries. Our extensive experience in these diverse fields prepares us for almost any development project. Our approach to utilizing lab and pilot scale plants in the development and testing of new processes and products has proven very successful. Because of our experience and success in process and product development, ACT is recognized as a world leader in development work.

Large –Scale Pilot Plant

CONFIDENTIALITY

Your project and process requirements are kept strictly confidential and protected by signed secrecy agreements.

Fluid Bed Pilot Plant

Advantages of ACT Pilot Plant Services

- All technology and products developed are owned by our client.
- Capabilities range from bench scale pilot plants to 2-ton per hour continuous production pilot plants.
- Pilot plant may be set up at ACT's facilities or at another location.
- Our large inventory of process equipment allows for rapid assembly and startup.
- Low cost specialty equipment can be quickly designed and fabricated by ACT.
- All pilot plant services are tailored to your schedule and budget.
- We welcome and encourage your involvement throughout the project.
- Upon completion of your project, the pilot plant equipment may be leased or purchased from ACT.
- All ACT pilot plants are supervised by experienced chemical and process engineers and supported by our team of technicians, laboratory staff, designers, and craftsmen.
- Two (2) high/low pressure steam boilers available.

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