Cincinnati USA
Chemistry Industry Leadership

Photo by R. Maksonneuve, Courtesy of Patheon

Cincinnati USA

Creating the Right Formula for

Innovation

From the laboratory to the production line, corporations in the chemical industry have found Cincinnati USA to be a key ingredient in their formula for success. As a leader in chemical and plastics employment, Cincinnati USA is home to almost 300 businesses involved in the manufacturing of basic and specialty chemicals; pharmaceuticals; soaps and cleaners; flavorings; printing inks; adhesives, paints, and coatings; and plastics and rubber products.

An Experienced Workforce

■ Cincinnati USA has a stable, productive workforce of 1.5 million within 50 miles.

■ 35,600 skilled workers are employed by Cincinnati USA's chemical and plastics companies. Of these, more than 3,000 are chemists, chemical engineers and technicians, and chemical plant and systems operators.

Extensive Research & Development

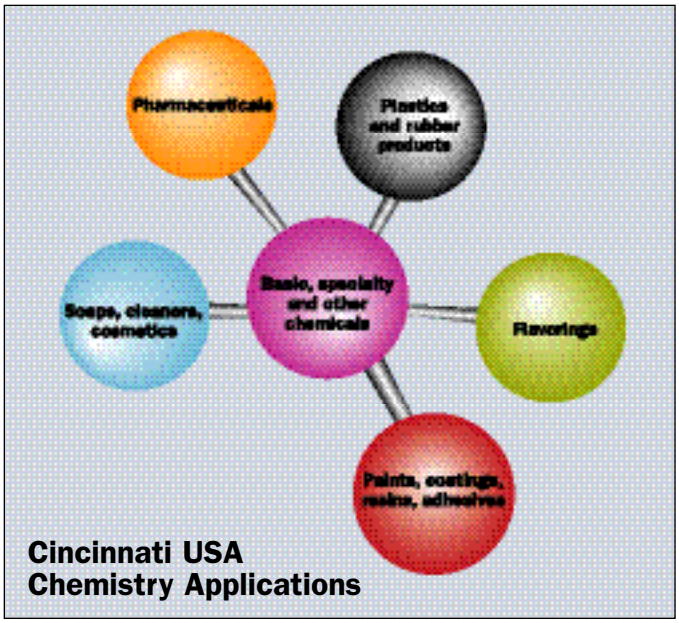
■ Cincinnati USA R&D activities cover a wide variety of applications: from inks, polymers, flavorings, medical diagnostics and cosmetics to fluids for machining, grinding and corrosion resistance.

■ Smaller companies headquartered in Cincinnati USA offer specialized R&D in niche industries:

- Griffin Industries, Inc. is the nation's largest privately-owned rendering and food by-product recycling company and innovator in bio-diesel production.
- Biologics International, Inc. is the world's largest producer of both pharmaceutical and cosmetic grades of Live Yeast Cell Derivative.
- HiTech Polymers Inc. is a custom compounder of specialty and thermoplastic resins for the consumer, medical, electronics, packaging, construction and automotive industries.

■ R&D in polymer science, membranes for fuel cells, and nanotechnology—as well as spin-offs from genetic and pharmaceutical research—are becoming increasingly important to our region. These initiatives are strongly tied to federally-funded research and industry-university partnerships at Cincinnati USA universities and hospitals.

■ The National Science Foundation (NSF) has funded the industry-university cooperative research center at the University of Cincinnati (UC) College of Engineering's Center for Membrane Applied Science and Technology (MAST), a dual site research center involving faculty and students from both UC and the University of Colorado.



Cincinnati USA Chemistry Applications

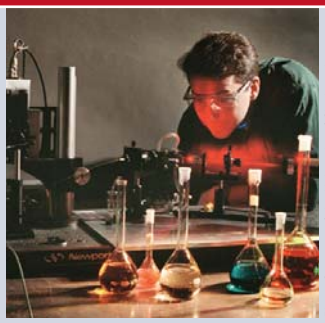


Photo Courtesy of the University of Cincinnati

■ In 2005, UC announced the formation of the Institute for Nanoscale Science and Technology to offer the promise of ground-breaking advances in physics, chemistry, materials science, electronics and medicine, as well as help educate the next generation of scientists and engineers. Developed through an interdisciplinary, intercollegiate collaboration at UC, the Institute is one of only 12 national grants funded by the NSF to focus on integrating nanoscale science into undergraduate education. Molecular manufacturing, or nanotechnology, is expected to require a worldwide workforce of 2 million in the next decade.

■ Hundreds of scientists, engineers and technicians work in several U.S. Environmental Protection Agency centers of R&D excellence throughout Cincinnati USA.

■ The National Homeland Security Research Center in Cincinnati coordinates research on detection, containment, and clean up of potential chemical, biological, and radiological terror attacks.

■ The National Risk Management Research Laboratory's Cincinnati office develops methods to prevent and reduce water and watershed pollution, as well as restore ecosystems.

■ The National Center for Environmental Assessments supports research for a number of divisions. Environmental economics—which integrates ecological and human health risk assessments with economic analysis to support decisions—is an emerging area of research for the Cincinnati Division.

■ The U.S. Food and Drug Administration's Forensic Chemistry Center has developed techniques to screen for more than 250 toxic poisons, and conducts long-term studies of poison effects.

Top Educational Support

Currently, 22 PhD programs at six universities within 200 miles of Cincinnati USA—including the **University of Cincinnati (UC)**—are ranked high in chemical engineering, materials engineering, chemistry, biochemistry, molecular biology and pharmacology.

■ UC ranks second in nanotechnology education in the U.S.

■ Wim van Ooij, professor of chemical and materials engineering at UC, holds more than 50 patents and has submitted more than 100 invention disclosures, largely on coatings and corrosion protection.

■ UC was recently awarded a five-year NSF grant to train U.S. graduate students with a focus on interdisciplinary applications of membrane science. The $4 million Integrative Graduate Education and Research Training (IGERT) award involves principal investigators from the UC College of Engineering Department of Chemical and Materials Engineering and the College of Medicine Department of Genome Science. Additional investigators include the Departments of Biomedical Engineering, Pharmacology and Cell Biophysics, and Pediatrics and Surgery.

■ UC offers undergraduate and graduate degree programs in chemistry, biochemistry, bio-organic chemistry, bio-pharmaceutics, pharmacology and other related specialties.

■ UC's environmental health department has received an $8 million grant from the National Institute of Environmental Health Services to operate a hazardous waste worker training program, one of only 18 in the U.S.

■ UC College of Applied Science offers associate and bachelor degrees in chemical technology.

■ Other local colleges and universities serving the chemical industry include:

UC Raymond Walters College
Northern Kentucky University
Cincinnati State Community and Technical College

Cincinnati USA Chemistry Leaders

Basic, specialty and other chemicals

- **Ashland Inc.**: petroleum products, motor oils, chemicals
- **Cognis Corp.**: oleochemicals, ozene acids, esters, surfactants
- **Noveon Hilton Davis Inc.**: synthetic organic dyes and pigments
- **PMC Specialties Group Inc.**: specialty and synthetic chemicals, corrosion inhibitors
- **Rohm & Haas Co.**: chemicals used to manufacture vinyl and PVC products
- **Shepherd Chemical Co.**: inorganic metal salts, organic metal chemicals

Pharmaceuticals

- **Barr Pharmaceuticals Inc.**: oral contraceptives research, manufacturing, packaging
- **Girindus AG**: drug actives and intermediates
- **Meridian Bioscience Inc.**: diagnostic test kits, purified reagents
- **P&G Pharmaceuticals Inc.**: prescription and over-the-counter pharmaceuticals, R&D
- **Patheon Pharmaceuticals Inc.**: sustained/controlled release pharmaceuticals
- **PediaMed**: pediatric pharmaceuticals
- **Xanodyne Pharmaceuticals Inc.**: pharmaceuticals for women's health

Flavorings

- **Degussa Flavors**: flavors for food, dairy, beverage and pharmaceuticals
- **Givaudan Flavors Corp.**: flavors, spices and extracts
- **Mane Inc.**: fragrance and flavoring blending and encapsulating
- **Sensus Flavors**: natural concentrated flavor essences and extracts
- **Wild Flavors**: flavors, spices and extracts

Soaps, cleaners and cosmetics

- **Avon Products Inc.**: toiletries, soaps and cosmetics manufacturing
- **KAO Brands Co.**: toiletries, soaps and cosmetics
- **L'Oreal USA Inc.**: shampoos and haircare products
- **St. Bernard Soap Co.**: bar soap manufacturing

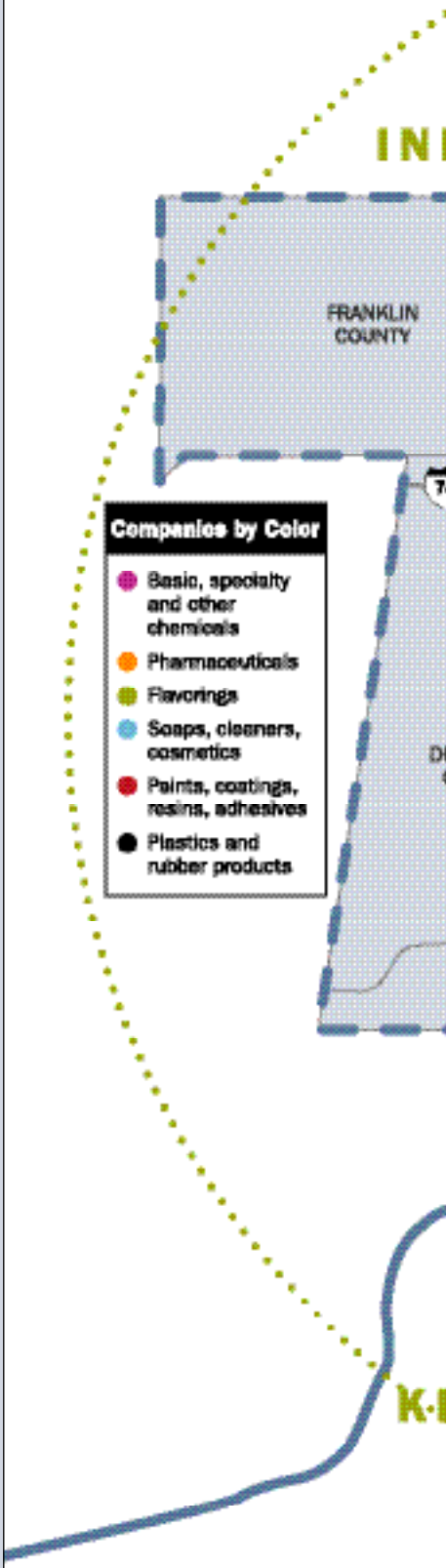
Paints, coatings, resins and adhesives

- **A.O. Smith**: protective coatings, porcelain enamels
- **ChemQuest Group Inc.**: coatings, adhesives and sealants management consulting
- **Michelman Inc.**: wax emulsions and dispersions, coatings and equipment
- **Sun Chemical Corp.**: printing inks, organic pigments, colorants and coatings
- **Sunnex Inc.**: adhesives and sealants, fuel tank coatings, paints, foams
- **Three Bond International**: adhesives, sealants for automotive and electronic industries
- **Ticona LLC**: polymer development, formulation, R&D

Plastics and rubber products

- **Aristech Acrylics LLC**: seamless, continuous cast acrylic sheets
- **Crown Plastics Co. Inc.**: thin gauge ultra high molecular weight polyethylene
- **CTL Aerospace**: molded and fabricated fiber reinforced polymer structures
- **Formica Corp.**: plastic laminates and resins
- **Graham Packaging**: plastic containers
- **Knauf USA Polystyrene Inc.**: polystyrene products
- **LANXESS Corporation**: engineered plastic pellets
- **Lyondell Chemical Company**: polymers, polymer specialties, R&D
- **Milacron Plastic Technologies**: injection molding
- **Parkway Products Inc.**: custom molding of urethane, silicone, thermoplastic

Flags indicate parent company's country of origin.



CincinnatiUSA.org

Cincinnati USA is a key part of the supply chain for many companies in the chemistry industry. Nearly 300 companies and organizations are located in the region, including those highlighted below.

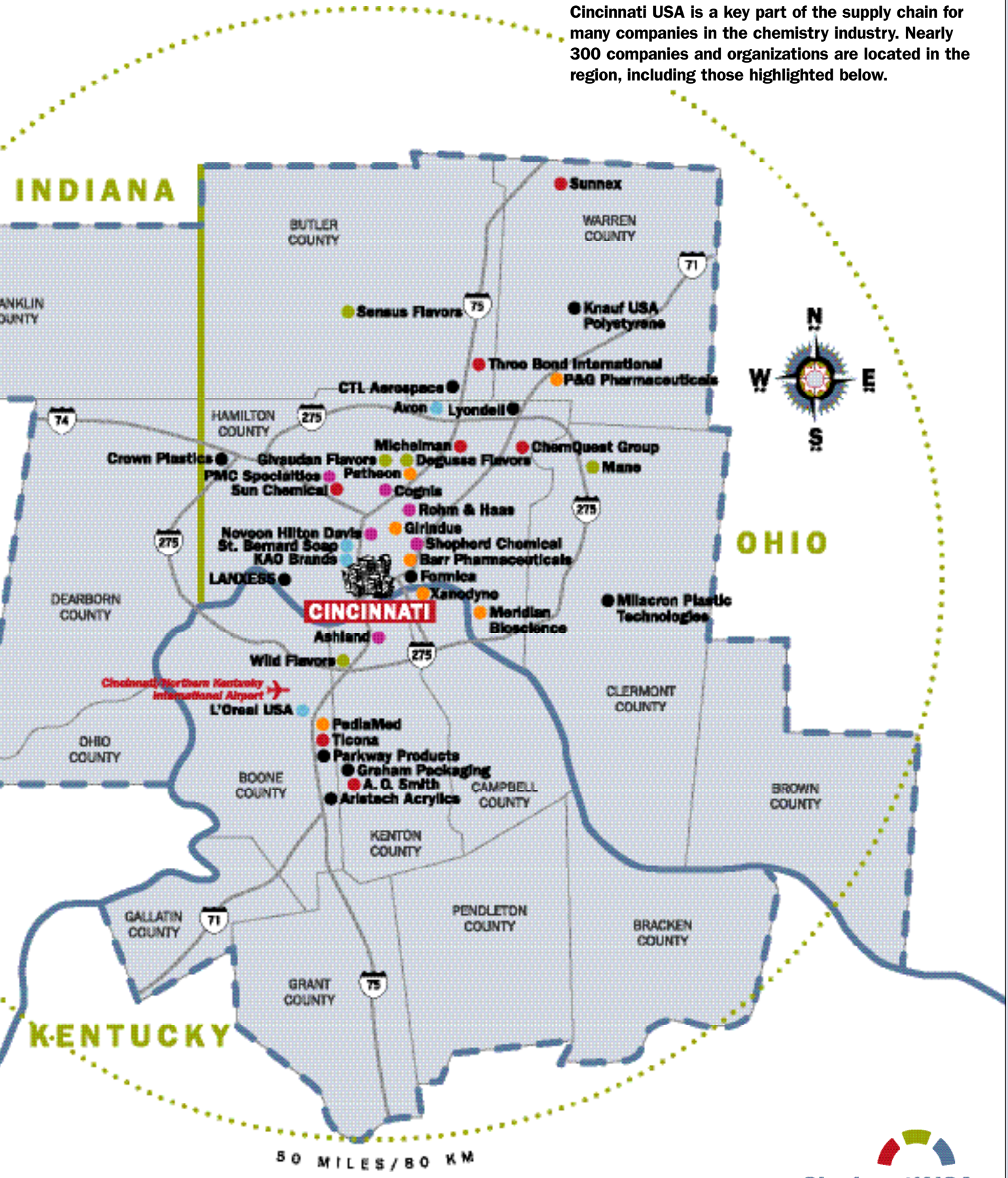


Photo Courtesy of LANXESS Corporation

Cincinnati USA's Chemistry Innovators

Basic, specialty and other chemicals

■ Cognis Corporation is an affiliate of the worldwide Cognis Group and maintains its North American headquarters in Cincinnati USA. As the global leader in oleochemicals suppliers, Cognis is also one of the leading firms in the specialty chemicals field and nutritional ingredients.

■ Ashland Inc., a Fortune 500 company headquartered in Cincinnati USA, is a worldwide chemical and transportation construction company with sales and operating revenues exceeding $7.5 billion.

Pharmaceuticals

■ Many companies manufacture pharmaceuticals and pharmaceutical intermediates in Cincinnati USA. Included are:

- P&G Pharmaceuticals, a global giant in household products whose rapidly growing Health Care division has a number of drugs on the market and in development.
- Girindus, a technology-driven company, supports the pharmaceutical and cosmetic industries by developing active pharmaceutical ingredients (API) for preclinical and clinical laboratories and pilot plant facilities.
- PediaMed, a company passionate about improving the health and wellness of infants, children and adolescents, is devoted to identifying, developing and marketing branded pharmaceuticals, like Clarinex, within pediatrics.

Photo by Gordon Baer, Courtesy of Procter & Gamble

■ The UC Genome Research Institute (GRI) is dedicated to unraveling the primary mechanisms of diseases at the genetic, molecular and cellular levels. Internationally-recognized UC investigators, scientists and researchers collaborate with P&G Pharmaceuticals. Research programs at GRI apply state-of-the-art modern molecular technologies in 350,000 sq. ft. of world-class laboratories to focus on the fields of obesity/diabetes, vascular biology, metabolic diseases, and cancer.

■ Cincinnati Children's Hospital Medical Center offers more research space than any other pediatric facility in the nation. *U.S. News* regularly ranks Children's Hospital among the 10 best pediatric hospitals in the United States. Children's is ranked second in funding among comprehensive pediatric centers receiving National Institutes of Health (NIH) research grants.

Flavorings

■ Cincinnati USA is home to almost 200 beverage and food processing companies. The region is considered one of two U.S. hubs for the $12.9 billion worldwide flavor and fragrance industry.

■ Two of the top 10 flavorings companies in the world, ranked by sales, have operations in Cincinnati USA: French-owned MANE, Inc. built its U.S. flavor headquarters and R&D center in 2000. Swiss-owned Givaudan Flavors, the world sales leader, renovated and expanded its research labs for the third time and opened a 61,000 sq. ft. Culinary Centre, with a state-of-the-art Culinary Amphitheater, in 2004.

Photo Courtesy of LANXESS Corporation

Soaps, cleaners and cosmetics

■ P&G, headquartered in Cincinnati USA, has dominated sales in the cosmetics and toiletries industry for more than a decade, and has held the number one spot on *Happi* magazine's Top 50 U.S. based household and personal product marketer's list since the list began in 1978.

■ Avon, the world's largest direct seller of beauty products, has a manufacturing plant in Cincinnati USA.

■ KAO Brands Co. (formerly Andrew Jergens) produces Jergens Natural Glow, a moisturizer researched and developed in Cincinnati USA that features a touch of sunless tanner. Since its launch in 2005, the product has become the number one selling hand and body lotion.

Paints, coatings, resins and adhesives

■ ChemQuest Group, an international chemical consulting and research firm headquartered in the region, reports that 70 percent of the leading sealing, coatings, and adhesives companies' headquarters are within a 300 mile radius of Cincinnati USA.

■ Three of the world's top 25 ink manufacturers, ranked by sales—Environmental Inks and Coatings, Flint Ink Corp., and Sun Chemical–Performance Pigments—have branch manufacturing and distribution locations in Cincinnati USA. A fourth, Color Resolutions International LLC, is headquartered here and is a major manufacturer of inks, adhesives, coatings, and solvents for printing on containers, folding cartons, rigid plastic containers, and other specialty applications.

■ Shepherd Color is the world's largest producer of complex inorganic color pigments with end uses in a variety of applications requiring heat or cold resistance and durability. They recently received FDA approval for a food-contact polymer colorant used in plastic tumblers, dinnerware, food preparation appliances and food and cosmetics packaging.

Strong industry support

Cincinnati USA is home to many companies that serve the chemical and food processing industries, including:

■ Advanced Testing Laboratories, Inc., Datachem Laboratories, and Q Laboratories, Inc. all analyze, test and consult on chemicals, foods and cosmetics, drugs and industrial hygiene.

■ Planet Products Corp., R.A. Jones and Cincinnati Sub-Zero Products, Inc. are manufacturers of specialty food, chemical and drug packaging and cold storage equipment.

■ Ventilex supplies fluid bed dryers, coolers and conditioners, as well as complete process support.

■ Krauss-Maffei Process Technology, Inc. manufactures and supports comprehensive liquid/solid separation equipment and applications.

Plastics and rubber products

■ Ampac Flexicon LLC, a diversified, international leader in flexible packaging, is the preeminent supplier of retail specialty plastic bags and disposable, tamper-evident security bags. The company is also a leading manufacturer of high-performance, flexible packaging materials for pharmaceutical, medical, healthcare, chemical, food and industrial markets.

■ The Equistar Technology Center, part of Lyondell Chemical Co., is a multi-million dollar, state-of-the-art research facility located in Cincinnati USA. The campus houses the company's polymers, polymer specialties and research and development functions.

■ Since the early 1950s Cincinnati USA has been home to one of the largest ABS and SAN plastics manufacturing facilities in all of North America. Today, LANXESS operates the 130 acre complex facility that produces engineered plastics that serve the medical, automotive, appliance, housing and personal care markets. Aside from the manufacturing operations, the site is home to the company's main Research and Development Center, whose purpose is to develop new products and provide innovative product applications for the future.

Cincinnati/Northern Kentucky International Airport (CVG) was voted the No. 1 U.S. Airport, 2004.

Location and Accessibility

Cincinnati USA is a premiere location for companies in the chemical and plastics industries in the United States. The region is centrally located, home to one of the world's top international airports and dedicated to educating people for careers associated with these fields.

Cincinnati USA is within 600 miles (966 kilometers) of:

- 43 percent of the nation's population
- 44 percent of the nation's manufacturing establishments

One of the World's Top Airports

- Cincinnati/Northern Kentucky International Airport (CVG) was voted the No. 1 U.S. *Airport, 2004*.
- More than 500 daily departures.
- 120 non-stop destinations.
- International non-stop air service to Frankfurt, London, Paris, Montreal, Toronto, Amsterdam and Rome.
- Serves more than 22 million passengers a year.
- Courier hubs for DHL, FedEx, and UPS are located within 100 miles.

Cincinnati USA Partnership for Economic Development

For additional information about locating your business in Cincinnati USA, visit: **CincinnatiUSA.org**. For specific questions, email us at **partners@cincinnatichamber.com**.

The Cincinnati USA Partnership is a regional economic development organization representing Southwest Ohio, Southeast Indiana, and Northern Kentucky. The Partnership has helped hundreds of companies locate their businesses in Cincinnati USA.

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