

CYTEC



R&D in Specialty Chemicals

Thinking Bigger and Broader

2 | Research Focused on Your Needs



As markets become increasingly efficient and competitive, more and more businesses rely on technology to give them an edge. Cytec's research laboratories provide customers with cutting-edge technologies that enable them to attain lasting competitive advantage and achieve their business objectives.

From development of new product platforms to short-term troubleshooting, Cytec collaborates with customers to deliver solutions that help enhance performance, cut costs, and maximize return on assets.

The key to delivering “heightened and accelerated” innovation is thinking “bigger and broader.” This is the focus of our endeavors as we look to leverage our existing competencies in diverse markets and to develop new and adjacent technologies. We use state-of-the-art processes and tools combined with a high degree of customer interaction and applications knowledge to understand unmet customer needs and translate these into product innovation projects. When supported by a well-structured and disciplined Stage and Gate based new product development process, Six Sigma, and effective project and portfolio management, genuine market-focused innovation is the end result.

A partnership with Cytec opens a door to:

- Products and processes proven to improve existing standards
- Innovative, enabling technologies and solutions
- Scientists and engineers who can help analyze and assess technical challenges and processes
- Research and development collaboration to efficiently and cost-effectively drive measurable results



“Cytec has built an exceptional research community of scientists spread over several continents that can bring their widely varied expertise and experience to bear on customer issues. Through continuing collaborations, this host of researchers can pull together highly focused teams with the right backgrounds to address specific technical concerns, functioning seamlessly as an integrated team irrespective of the geographic distances that may separate them. This is a unique and powerful capability.”

Martin L. Cohen, Ph.D.
Research Fellow, Breakthrough Innovation Group
Stamford, CT USA



4 | Creating Value For Customers



Cytec's experience and wide customer base give us the ability to understand complex issues, recommend solutions and validate outcomes. The result is a long track record of delivering value to our customers and helping them achieve their objectives.

We have helped customers meet a variety of challenges that include complying with new environmental regulations, reducing processing time, formulating novel chemistries for a broad range of conditions and satisfying an assortment of unique end-user benefits.

Some issues that Cytec has resolved

Challenge: Alumina Processing Chemicals –

Customers asked Cytec to find a method to reduce sodalite scaling in Bayer-process alumina plants. The industry had traditionally coped by removing scale after it had accumulated, at a cost of more than \$300 million annually in time, labor and expenses.

Solution: Cytec's MAX HT™ sodalite scale inhibitor takes a novel approach by preventing scale from forming, thereby saving time and expense while increasing overall productivity.

"Our broad use of different chemistries is based on specialization and supported by exchanges between specialists within Cytec and our suppliers and customers. Open discussion and close cooperation with our customers give us the tools to follow the needs of the market quickly."

Johann Billiani, Ph.D.
R&D Manager, Waterborne Coating Resins
Graz, Austria





Challenge: Liquid Coating Resins – Customers show very high interest for one-pack waterborne primers applicable and cured at ambient temperatures to replace solvent-borne systems on all kinds of substrates (metal, wood, others).

Solution: Proprietary and broadly patented cationic, high molecular weight, waterborne resins provide excellent tannin-blocking performance on wood and good corrosion resistance on metal when applied as a one-pack system.

Challenge: Mineral Processing – One of the world's largest copper and gold mines, seeking to improve its return on investment, requested Cytec's help to increase the recovery of metal from its ores.

Solution: Metallurgical fingerprinting with new MAXGOLD™ and frother formulation enhanced metal recoveries, reduced gold inventories in the tailings, and generated a large return on investment for the mine.

Challenge: Pressure Sensitive Adhesives – As industry uses more engineered plastics in place of steel, Cytec's PSA tape customers need PSAs with improved adhesion for these low surface energy plastics while maintaining their existing high surface energy properties.

Solution: Cytec's new UV PSAs for high deposition tapes are one of the industry's first PSAs to achieve equal adhesion to both low and high surface energy substrates while exhibiting excellent cohesion required in tape applications.

Challenge: RADCURE® Resins – Industrial coatings customers demanded an improvement in the durability of plastic coatings used in the electronics and automotive markets.

Solution: The modification of Cytec's RADCURE resins with nanoparticles. This modification increases the surface hardness, abrasion resistance, weatherability, and thermal stability of coatings based on these resins.

Challenge: Polymer Additives – Customers demanded trouble-free processing, excellent dispersion, a high performance to cost ratio, and faster time to commercialization in multiple markets including pipe, rotational molding, and agricultural films.

Solution: New CYASORB CYNERGY SOLUTIONS™ stabilizers. These patented products are designed to deliver superior performance in key applications.

"I believe the highlight of Mining Chemicals R&D is our ability to develop differentiated technology to address both current and anticipated industry needs. We have maintained a leadership position in the mineral processing industry for several decades through our pioneering research, applications expertise and total systems approach. This has been a great source of pride for me and has sustained my long tenure at Cytec."

D. R. Nagaraj, Ph.D.

Research Fellow, Mineral Processing Chemicals
Stamford, CT USA



6 | A Commitment to Customer-Oriented R&D

Since its inception, Cytec has been dedicated to advancing the knowledge of chemical processing through R&D. Today, investments in recruitment, facilities, training, customer seminars and conference participation reflect our commitment to resolving our customers' technological challenges and helping them succeed.

With approximately 400 research staff and a global network of laboratories, we are able to leverage our scientists' skills across many regions and functional groups, presenting customers with unique insights and comprehensive answers.

Many factors help us consistently deliver quality results to customers:

- Our team of highly qualified and experienced scientists. These accomplished researchers have secured nearly 200 patents in the last five years and have a long history of contributing to scientific literature and speaking at industry symposia. Their productivity and skill at developing solutions create successful customer collaborations.
- State-of-the-art testing and analytical equipment at multiple locations, which facilitate investigations into a wide range of chemistries and substrates through a variety of methods.

- Detailed knowledge of application methods in a diverse range of end-user markets.
- Pilot plant with scaling capabilities, ensuring close correlation between laboratory performance and plant operation.
- A market orientation that anticipates customer needs and applies R&D to meet them.
- A broad and deep research organization, with a size and scope that enables Cytec to offer its customers effective project leadership, more resources and faster turnarounds.

Take the next step...

Cytec's scientists, engineers and technicians in our Specialty Chemicals research centers are eager to find new solutions for you.

...Challenge us today!

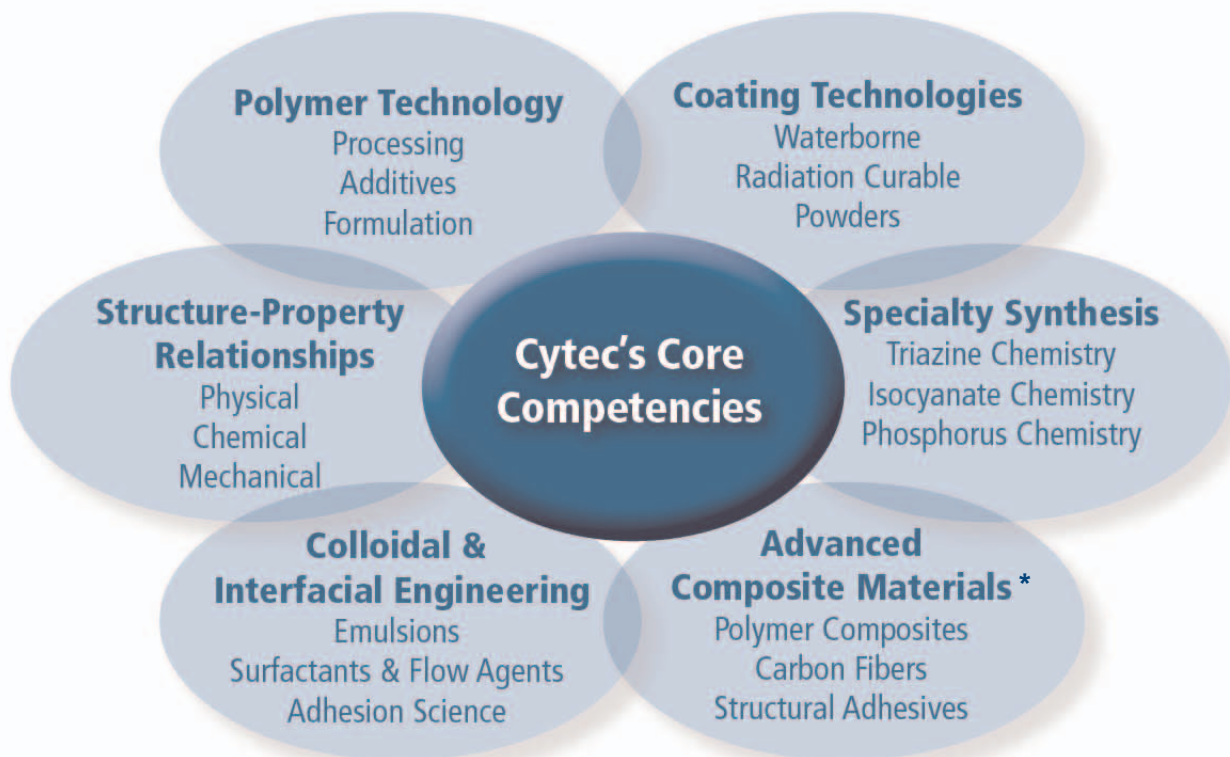
For more information on how we can work with you to attain your objectives and advance your business, contact your Cytec representative.

"To fulfill our objective of delivering superior value to our customers, we have dedicated R&D teams investigating the industrial coatings and graphic arts industry requirements. Based on this, we are designing a full range of UV/EB curable resins and diluents that address the most stringent needs of the energy-curing coatings market."

Thierry Randoux, Ph.D.
R&D Manager, RADCURE Resins
Drogenbos, Belgium



Highlighted below are broad areas of expertise available within Cytec Specialty Chemicals:



*Cytec Engineered Materials

Leading Innovation Together

Whether it is in the development of new product platforms or in short-term troubleshooting, we at Cytec have a strong philosophy of collaboration and strive to deliver solutions that provide sustainable value, enhance performance, reduce costs and maximize return on assets throughout the value chains that we serve.



8 | Cytec Specialty Chemicals

Global Research Network



THE AMERICAS

Atlanta, GA USA
Niagara Falls, Canada
Santiago, Chile
Springfield, MA USA
Stamford, CT USA

EUROPE

Bassano, Italy
Brussels, Belgium
Graz, Austria
Manchester, UK
Wiesbaden, Germany

ASIA PACIFIC

Gumi, Korea
Shimonoseki, Japan
Tokyo, Japan

PRODUCT LINES

- Liquid Coating Resins
- Mining Chemicals
- Phosphine and Phosphorus Specialties
- Polymer Additives
- Powder Coating Resins
- Pressure Sensitive Adhesives
- RADCURE Resins
- Specialty Additives
- Specialty Urethanes

CORPORATE HEADQUARTERS

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Most centers are certified for ISO 9001, ISO 14001:2004, EMAS EG Nr 761/2001 and Behavioral Safety Audits.

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