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Accelerating high-performance chemical innovation with better data management:

What to expect

This white paper explains how data capture and analytics solutions can accelerate your R&D innovation, while reducing risk, to put you on the expressway to market success:

- Discover how to increase efficiencies by recording experiments in a common digital platform.

- See how you can implement leading data management techniques, so data is structured for analysis in real time.

- Learn how to transform data into insights with smart analytics.

This white paper is of interest to R&D organizations developing specialty chemicals and formulations for applications in chemicals/agrochemicals and commercial product uses, such as:

Polymers ▪ Cleaners ▪ Electronic Chemicals ▪ Construction ▪ Mining ▪ ▪ Plastic Additives ▪ Printing Inks ▪ Coatings, Adhesives, Sealants & Elastomers (CASE) ▪ Pulp & Paper ▪ Textiles ▪ Water Treatment▪ Corrosion Inhibition ▪ Flame Retardants

Your need for speed

Whatever your area of focus, you need to efficiently develop new formulations, or modify existing ones, conduct tests, and analyze results. You also need the insights and flexibility to pursue secondary options if they offer a better payoff.

Which performance chemicals will produce the right heat-resistant coating? How can you optimize your synthesis or formulation process to increase yield while decreasing cost and time? Are the recommended manufacturing techniques environmentally sustainable?

As you work to develop new products to give your company and customers a competitive edge, you likely face five common challenges:

- Speed to market. It's essential to go fast to beat your competition in the race to market.

- Process improvement. Speed must be balanced by attention to quality and risk management, ensuring the resulting products perform as planned.

- Cost of materials. Cost and availability of materials must be factored in when

selecting the best formulation to advance in the research pipeline.

- Unmet market needs. Advanced materials must address emerging and evolving market needs to ensure customer adoption
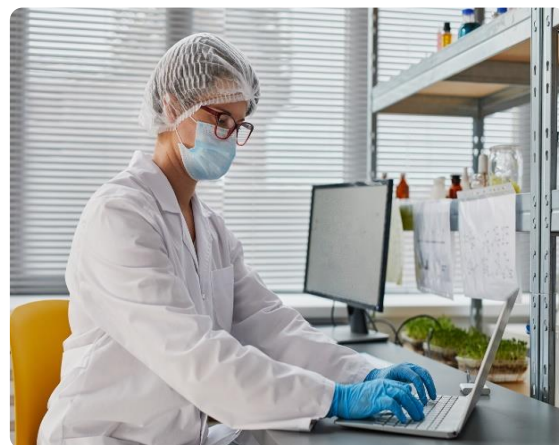
Data management designed for your challenges

Making commercially viable products is time-consuming if the way you handle data is not satisfying the rapidly changing demands of your business and the marketplace. Revvity Signals has found by working with customers in the fine chemicals industry that 80% of data – even digital – becomes untraceable, often because it's stored on individual computers, and that not creating digital records of data accounts for 17% of data loss that delays or sets back research.

- Do any of these common internal challenges sound familiar?

- It takes too long to discover novel formulations, develop new ones, or modify existing ones to suit new applications or meet performance and cost parameters.

- The sheer volume of formulations and ingredients makes search and retrieval of data time- and labor-intensive.

- Work is delayed because scientists don't know what materials are available in-house and in sufficient quantities, what needs to be ordered, and what it should cost.

- It's difficult to determine if ingredients and formulations meet specified test criteria.

- There's nothing in place to keep track of samples and related results effectively, such as linking sample names and other metadata to avoid errors.

- Inefficient management of people, samples, instruments, and other resources is interfering with timely, high-quality testing.

- It's hard to get a holistic view across all stakeholders, enable collaboration, and easily track progress across all programs,

drill down into a subset of results for further analysis, and ask informed questions.

What you need is a complete, consistent, and collaborative environment that meets the scientific and technical needs of your organization and your team—a solution that will speed up data capture, data processing, decision making, and material tracking, as well as overall data analytics, to give you greater maneuverability when responding to changing market demands.

Revvity Signals' solutions accelerate specialty chemicals development by helping you understand the relationships between components and product performance. This enables you to make insightful decisions based on predictive modeling.

Powerful, highly scalable, and intelligent, Revvity Signals solutions leverage our decades of experience designing smarter solutions for real-world problems.

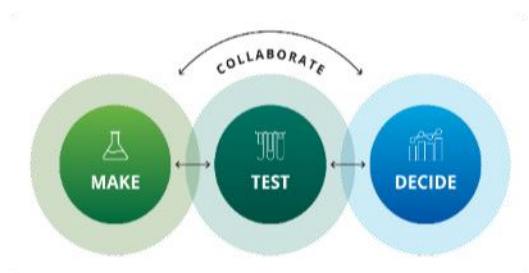## Your roadmap to faster market readiness

Imagine you need to develop a novel paint formulation that can withstand severe heat and cold. Or to deliver an improvement to an innovative adhesive. Revvity Signals delivers the data capture and analytics solutions that get you to market faster. And with less risk.

We understand the obstacles you face in your race to market. You need to ensure you're investing in the right formulations, collaborating effectively, and

making the best decisions without unnecessary delays.

Our solutions help you step on the accelerator with:

- A complete, consistent, and collaborative environment that meets the scientific and technical needs of the organization and users.

- Faster data capture, data processing, decision making, material tracking.

- Data analytics that enable greater flexibility to respond to market demands

- Collaboration across geographies, with shared access to data from complex workflows.

- Access to audit trails and other information related to security regulations for proof your systems, data, and IP are secure and compliant.

- Easy monitoring of who has accessed your systems, to protect your IP.

In fact, for a leading sustainable manufacturer of carbon black additives, Revvity Signals solutions have delivered 20-30% time-savings, 15% cost reduction per user by reducing the need for re-doing experiments, 25% improvement in IP protection because data is structured in a compliant manner that allows the legal team to file more patents, and a fourfold increase in response time to regulatory questions and findings.

A major electronics giant has reported deeper collaboration across multiple management and technical levels using Revvity Signals solutions, noting also the functionality, intuitiveness, and rich APIs.

Integrated tools for your innovation journey

Each of Revvity Signals' specialty chemicals solutions targets specific information roadblocks that stand between you and the marketplace. Together, they offer an end-to-end way to capture, manage, and analyze data so you're making the best choices at every turn along the way.

Better collaboration through Signals Notebook

Signals Notebook, a cloud-native electronic laboratory notebook (ELN), enables better collaboration between innovators, decision-makers, chemists and formulators, process and production engineers, and product testing experts, as experiments and results are easily accessible to all team members. No matter how complex your workflows are, or how geographically diverse your team is, Signals Notebook has the power to put everyone on the same page.

Signals Notebook is the only ELN that covers a comprehensive set of scientific use cases, spanning chemistry, formulations, analytical testing, and more. It puts you in the passing lane for digital transformation through an outstanding experience. It will also enable you to improve productivity and data transparency through enhanced collaboration, improved workflows, and lab automation.

Enhanced materials management with Signals Inventory

Signals Inventory, a component of Signals Notebook, automates inventory management, enabling users to lookup, link to, and update materials used within experiments without leaving the ELN.

Importantly, users can pull containers, materials, and samples directly into the Plate feature within their experiments.

Accelerate scientific decision-making with Signals Inventa

Signals Inventa has the key capabilities researchers need to identify structure performance

relationships, as well as to optimize multi-parametric optimization and scoring tools.

Signals Inventa is a next-generation data management system for analyzing scientific results. Powered by Revvity's Signals innovative Data Factory technology, it enables you to quickly access and analyze all scientific results collected throughout the research and development lifecycle. Inventa's powerful predictive analytics enable you to save valuable time when you need to focus solely on formulations that best meet the desired performance criteria.

Transform data into actionable insights with TIBCO® Spotfire®

TIBCO Spotfire allows researchers to correlate materials properties with performance. With powerful visualizations and predictive analytics, it gives you everything you need to prioritize work in the lab. This enterprise-class visual analytics and discovery platform empowers your team or organization to easily mine scientific data, and gain keen insights, to drive data-driven decisions record time.

Optimize scientific communication with ChemDraw®

With its origins as a chemical drawing tool, ChemDraw® has steadily evolved to become the leading chemically intelligent solution to help you perform quick structure searches across all documents where chemical information is stored and manage collections of molecules and/or reactions with their associated properties.

Move into the fast lane

Find out for yourself how Revvity Signals' solutions address problems with slow, inefficient development of novel materials due to a lack of an integrated data environment.

Put yourself in the drivers' seat to experience how Revvity offers value:

- Integrated solutions built to deliver specific end-user functionality to support Make-Test-Decide workflows.

- Integrated workflows to foster collaboration.

- Best-in-class visual/advanced analytics.

- Data for analytics is automatically associated together to provide holistic insights.

- Experimental narratives are captured to protect IP and available for learning through the enterprise.

- Enables products to be developed faster and with fewer failures through collaboration and information sharing.

- Solutions have scaled from small operations starting with as little as 5-10 users to enterprise companies with many thousand users and multiple geographies.

An international chemicals, logistics, and energy company reported that Revvity Signals solutions transformed the R&D culture, with easier collaboration and results-sharing. More than 60% of users reported the solutions easy to use and helpful in improving daily productivity, while 66% reported improved security of R&D data.
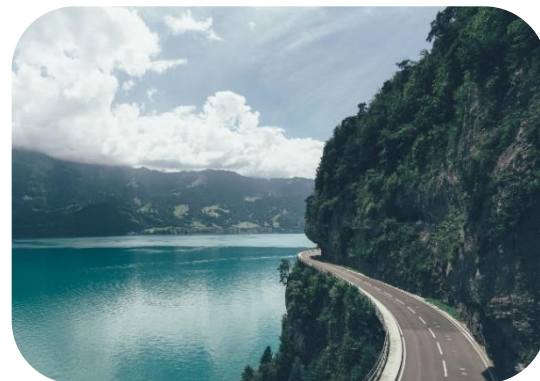
The road ahead

Join leading chemical and agrochemical companies that are using Revvity Signals' solutions to power their specialty chemicals innovation. Take control of your data, and fast track better ROI for your specialty chemicals R&D.

Revvity Signals' solutions accelerate your product development by helping you understand the relationships between components and product performance, enabling you to make insightful decisions based on predictive modeling. Powerful, highly scalable, and intelligent, our solutions leverage Revvity Signals' decades of experience in designing solutions for real-world problems.

We understand the hurdles you face in your race to market, and we've built the informatics solutions that formulate quickly and innovatively, collaborate effectively, and make great decisions.

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