



**CUSTOM CHEMICALS AND SERVICES,  
SUPPORTING SCIENTIFIC ADVANCES  
FOR HUMAN HEALTH**



**VWR enables the advancement of science by providing high-quality chemicals and services, customized to your product or manufacturing needs.**

We employ operational excellence to deliver solutions that enable research, testing, production, and commercialization across the globe.

With a well-established infrastructure of manufacturing facilities in North America and Europe (see page 10), we provide a variety of production services across numerous applications and market segments.

Our manufacturing capabilities range from custom synthesis of biological buffer compounds and amino acid derivatives, to compounding of liquid and powder products.

**We are committed to providing the highest value in manufacturing services. As we align with your needs, we remain dedicated to:**

- Flexibility and Innovation**
- Supply Chain Security**
- Quality and Regulatory Compliance**
- Operational Excellence**
- Breadth of Capabilities**
- Product Transfer and Design**



# Trust is Won with Results for Human Health

## We make products that impact lives.

Our scientists, engineers, production associates, and quality professionals manufacture custom kits, reagents, and chemical products for companies that focus on improving human health.

This requires an exceptional level of trust.

We are proud to support some of the world's foremost life science manufacturers, who trust the quality of our processes to help scale up production and deliver innovative products to market.



## Fighting Tuberculosis with Early Detection

VWR produces tuberculosis diagnostic reagents for a global leader in molecular diagnostics. The reagents are distributed to medical providers in locations, such as Africa, where early detection of tuberculosis is critical to improving patients' survival, managing the disease, and reducing the likelihood of transmission.

# Our People Make the Difference



VWR Custom Manufacturing Specialists offer broad experience in multiple disciplines of research and production environments. Our custom solutions enable improvements in manufacturing quality, capacity, and speed to market.

**In a word, our approach is best defined as flexible.**

Flexibility drives innovation as we build new capabilities to solve unique production challenges.

And innovation drives results for you.

## ASEPTIC PRODUCTION CASE STUDY

### NEED

A molecular diagnostics market leader needed to accelerate manufacturing of its in vitro diagnostics (IVD) testing products for infectious and other genetic-based diseases. The current supplier couldn't meet quality standards.

### SOLUTION

VWR Custom Manufacturing Services provided custom buffer production capabilities to improve the company's manufacturing quality, capacity, and speed to market.

### RESULTS

The customer...

- Invested several million dollars in R&D instead of making new capital investments
- Improved their quality acceptance rate by over 35%
- Increased speed to market of a major IVD by more than one year



## Broad Segments, Applications, and Services

**We enable science at every level.**

VWR can help you pursue your next research endeavor, or we can provide a manufacturing backbone to commercialize a new product. We provide support at any or all stages of a process to support specific needs.

We offer subject matter experts in an array of disciplines, from life science to industrial applications. Whether you are an industry leader or new to the market, we have the right manufacturing solution to support your quest to deliver your product to market.

### EXAMPLES OF THE INDUSTRY SEGMENTS WE SUPPORT



#### BIOTECH

- Environmental
- Agricultural
- Biomaterials
- Microarray and microfluidics
- Tissue engineering
- Nanotechnology



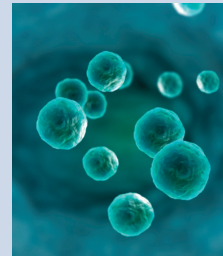
#### PHARMA

- Cell culture and fermentation
- Vaccine development
- Purification
- Fill and finish



#### CLINICAL DIAGNOSTIC

- Blood banking
- Hematology
- Tissue diagnostics



#### MOLECULAR DIAGNOSTIC

- Infectious disease
- Cancer
- Genetic markers
- Companion diagnostics
- Food safety testing
- Next generation sequencing



#### INDUSTRIAL

- Food and beverage
- Petrochemical
- Allied chemicals
- Mining

# How We Make It Happen

Chances are, you face increased complexity and competitive pressure in today's global economy.

VWR systems and processes have been developed, and continue to evolve, to directly support the growth of your business. We can help you maintain core strengths, stay focused on what matters, and respond quickly to new manufacturing challenges.

The right tools in place to address the complex needs of your business...

## VWR CUSTOM MANUFACTURING SERVICES

### QUALITY MANAGEMENT SYSTEM

US 21 CFR 820  
Compliant Sites

CAPA and Complaint  
Handling

ISO 9001:2008  
ISO 13485  
Compliant Sites

Personnel, Equipment,  
Buildings  
and Infrastructure

Design Control,  
Validation, Production  
and Process Controls,  
Purchasing Controls,  
Material Controls

### CONTINUOUS IMPROVEMENT



## Quality Systems You Can Trust

Navigating today's regulatory landscape can pose a serious challenge to organizations that must ensure safety and efficacy of products being sold to market.

As a manufacturer, we understand the need for security and transparency in our operations and throughout our supply chain. Our quality systems provide a layered approach to ensure uncompromising results and allow essential feedback, so that your ideas influence our continuous improvement cycle.

In addition to quality manuals, certifications, and systems in place, our associates respect the critical nature of your products. We ensure quality of work and attention to detail are engrained in every step of the process.

# The Art of Counterbalance

Quality Systems  
Supply Chain Security  
Production Capabilities  
Support Functions

Competitive Pressures  
Cost Management  
Capacity Optimization  
Speed to Market

VWR will deliver a finished product that meets your material specifications and workflow requirements exactly.

Above and beyond this, our open architecture and team of experts help you address a variety of challenges along the way. We customize solutions that are tailored to reduce the pressures confronting your business.



## Your Partner in Supply Chain Security

At VWR, we share the responsibility of supply chain security with our customers. Unlike other manufacturers, we take ownership of the regulatory process to ensure security and compliance as we manufacture and deliver your products.

### Asset Management

- Pack and hold inventory
- Product life cycle management
- Portfolio of both VWR and core brand suppliers
- Expanded warehouse utilization

### Quality Assurance

- ISO and FDA registered distribution and manufacturing centers
- Fully traceable and qualified supply chain for raw materials
- Custom documentation and certificates
- Change control and audit support

### Supply Chain Planning and Logistics

- Seven global manufacturing sites
- Redundant core operations
- Supply chain transparency

### Risk Mitigation

- Global distribution network - local and regional
- Trusted primary and secondary source supplier
- EDI and supply chain enterprise applications





Production Biochemicals

Regulatory and Quality Systems

## VWR Custom Manufacturing Services

Innovative Strategic Solutions

Custom Manufacturing and Sourcing

## Four Elements to Address Production Process Needs

Our teams bring together four elements to address every stage of your production process.

In addition to a wide selection of production chemicals and capabilities for liquid and powder compounding, fill and finish, and assembly, we also deliver a wide array of support functions that include everything from validation and custom documentation to supply chain and logistics solutions.

Dedicated teams and experts from each of these functions will work with you to develop the right manufacturing and supply chain solution.



### Test Kits Ensure Quality of Milk

VWR manufactures quality testing kits that help farms and food producers improve the safety of milk. The kits are distributed by a global innovator that supports dairy farm production. As a result, farms are able to improve their production process, limit microbial levels in milk, and ensure quality of a critical food supply.





### Liquid and Powder Manufacturing

- Custom formulations
- Synthesis of buffer compounds and derivatives
- Lab to production scale
- Dedicated facilities for biologicals



### Liquid and Powder Dosing and Packaging

- ISO class environments
- Aseptic processing
- Flexible packaging and fill/finish options
- Hazardous and sensitive material handling
- Automated production lines



### Assembly and Finishing

- OEM packaging and labeling
- Multi-component kit assembly
- Package and label design
- Label control and management

## Providing Innovative, Flexible, Customized Solutions

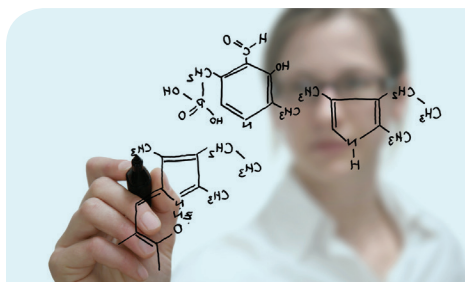
Our systems are modular in design. So you can use all or a tailored selection of our production centers, equipment, and infrastructure.

VWR process engineers and scientists will ensure the right processes and systems are used to meet your needs. Whether your product is in development or already commercialized, we can scale our systems appropriately. VWR can grow with you throughout your new product's life cycle or provide a high throughput solution, coupled with a seamless transition that keeps your mature product flowing to market.

We provide an entire team of skilled professionals who offer consultation and expertise in scientific and engineering as well as quality assurance, operations, and supply chain disciplines.

With VWR, you'll find the building blocks needed to customize a manufacturing and total delivery solution, one that's right for you and the markets you serve.

Working with VWR Custom Manufacturing Services is like having an advisory panel and project team just beyond the door of your own production facilities.



### Product Transfer and Design

- Seamless transition of product and process
- Validation
- Equipment and method transfer



### Quality Control

- Custom testing and method validation
- Customized certificates and documentation
- Biological and analytical test capabilities



### Quality Assurance and Regulatory

- ISO 9001; ISO 13485; FDA Registered facilities
- Change control and full traceability
- Custom documents

# Global Manufacturing Sites

Eight VWR manufacturing sites provide a global footprint to accommodate life science applications in biotechnology, biopharmaceutical, diagnostics, and research, encompassing research and development to full-scale production.



## BIOPHARMACEUTICAL CASE STUDY

### NEED

A biopharmaceutical company with novel technology for rapid expression of protein therapeutics in cellular-free systems asked VWR Custom Manufacturing Services to manufacture a complex fermentation media for use in the company's production processes.

### SOLUTION

With little experience in producing powder media blends and an aggressive timeline for fulfillment, the company chose to leverage our powder handling and blending capabilities to rapidly develop and scale up complex, multi-component fermentation media.

### RESULTS

Instead of spending time on manufacturing media, the customer was able to focus its resources on developing the new protein expression technology.

# Our Process is Focused on Meeting Your Manufacturing Needs



VWR will open every door to share the details of our manufacturing process with you. We provide a framework that extends from discovery all the way through final product realization and launch, keeping you informed every step of the way.

Our team of experts are capable of aligning at every functional level within your organization to provide peer level guidance and holistic understanding of your product needs and specifications. Your requirements are effectively translated into our operational infrastructure, quality management systems, and production workflows.

## Discovery

### Listen

Understand your challenges, goals, and timeline. Define product specifications, packaging, and regulatory requirements. Deepen two-way knowledge with you and build relationship.

## Project Planning

### Create

Develop a blueprint for your product. Earn your approval on all aspects of production from product specification to final presentation.

## Process Development

### Apply

Use best practices to develop production methods, test parameters, validation protocols, and documentation. Collaborate with you on project milestones. Perform pilot batch production and testing and prepare for scale-up.

## Production

### Implement

Transition to manufacturing with controlled documentation for first order production.

## Launch

### Deliver

Meet your demand and provide the right product on time. Combined with our global distribution network, we have the ability to build and maintain inventory in any one of our global distribution centers or warehouse facilities.



# VWR Production Chemicals complexity simplified

When a custom solution is not needed, our global production chemicals offering provides reliable and transparent supply chain solutions, while managing the ever-increasing complexity faced by your business.



## **SECURITY**

MINIMIZE complexity — MAXIMIZE supply chain security



## **SERVICES**

INCREASE productivity — FOCUS on process development and manufacturing



## **SUPPLY**

SIMPLIFY procurement — STRENGTHEN strategic sourcing



## **SUPPORT**

LEVERAGE global reach — GAIN local support

Contact VWR Custom Manufacturing Services at **1.800.932.5000** or e-mail **VWRCustom@vwr.com**