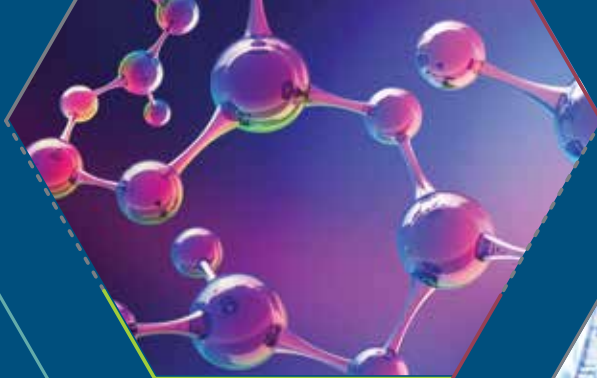


SOLUTION OFFERING



Process Chemistry R&D

Technologies that Deliver,
Results that Matter

 **CASYM**CHEM



At Asymchem, there are no process chemistry silos. Our experts work across the entire development continuum from the earliest stages of route scouting to large-scale manufacturing creating a seamless, efficient process.

A Comprehensive Toolbox for Enhanced Process Development Visibility

A strict division between R&D and manufacturing can keep you from seeing the big picture. Companies need a CDMO partner who can take them from R&D to manufacturing – with an eye to future process needs. Asymchem's specialized scientists and engineers work across the entire process development spectrum, giving them the know-how to lay the groundwork for success early.

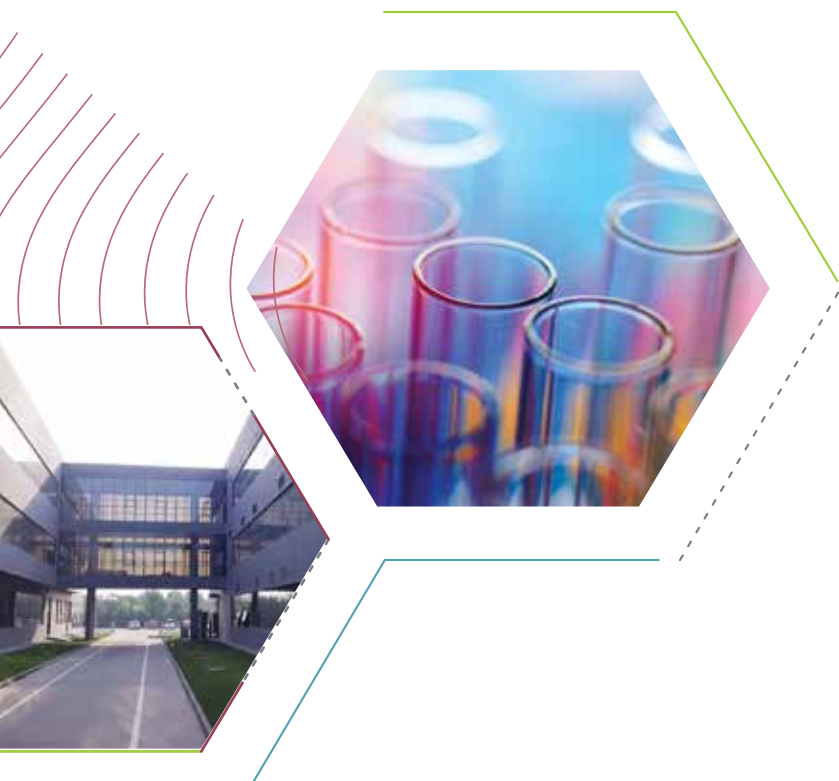
We focus on innovation and bring a full suite of tools starting at the route scouting stage with high-throughput technology and flow chemistry. As an early adopter of flow chemistry and its many benefits, we can employ it from the very beginning of synthetic route design and methodology development.

Our in-house biocatalysis expertise drives discovery of unique and novel enzymes for leveraging in the synthetic sequence. We also practice data-driven experimentation, leveraging the power of statistical models coupled with automation and HTP to understand key process parameters and factors while reducing the burden of experimentation.

Process R&D Strengths

- High-Throughput Experimentation
- Statistical Design of Experiments (HTP-DOE)
- Data Analysis
- Quality by Design (QbD) and Design Space
- (Asymmetric) Hydrogenation
- Photo and Electrochemistry
- Metal-Catalyzed Cross Coupling Chemistry
- Flow Chemistry

At Asymchem, we know that today's R&D challenge doesn't have to be tomorrow's manufacturing problem. That's why we are always looking ahead for how to create the safest, most sustainable, and most efficient process possible.



Integrating Process Chemistry Excellence into Manufacturing

Choosing the right CDMO partner for manufacturing comes down to capabilities, capacity, and history. Asymchem combines a comprehensive technological profile with a history of innovation. Our team is ready to help with process refinement, manufacturing control, and scaling up no matter where you are on the clinical development continuum.

Technologies

- Flow Chemistry
- Biocatalysis
- Fermentation
- Chiral Synthesis
- Hazardous Reactions
- Low Temperature
- Highly Potent
- Non-Precious Metal Catalysis
- High-Pressure Chemistry
- Electrochemistry
- Photochemistry

Capacity

- **cGMP manufacturing** up to 20,000 L scale
- Dedicated **API finishing suites** up to 8,000 L scale
- **Non-GMP manufacturing** up to 20,000 L scale
- Dedicated site for **Penem Intermediates** manufacture
- **HPAPI** manufacturing up to 1,000 L scale
- **Fermentation** up to 5,000 L scale
- **High pressure and cryogenic temperature** equipment at multiple sites
- A mix of glass-lined, steel (stainless, Hastelloy, titanium), and polymer-lined equipment
- **Continuous flow manufacturing** in PFR, CSTR, column and plate reactors, and full complement of DSP technologies
- Over 2,400 m³ of total reactor capacity across **eight production sites**
- **Diverse processing technologies**, such as lyophilization, spray drying, milling, etc.

>2,400m³
Reactor Capacity

8
Production
Sites

Diverse Suite
of Processing
Technologies



With You at Every Step

We have dedicated support teams to work with you. They collaborate on your behalf with our process chemistry, analytical, formulation, and regulatory teams to solve your challenges and meet the unique requirements of your project.

Our continuous flow production methods can cut cycle times, improve yields, and ultimately reduce costs. Advanced flow chemistry can deliver all that while also minimizing environmental impact and reducing down on toxic waste.

We continually expand and optimize our technologies and capabilities so that we can meet our client needs now and in the future.

Committed to Ensuring Quality and Compliance

Asymchem has a strong track record of complying with strict global safety and quality regulations. We have state-of-the-art facilities that operate in compliance with internationally recognized regulation.

Our Quality System implemented across all sites has proven itself in hundreds of successful audits by both clients and international regulatory agencies. Our in-house experts are capable of assisting you in drafting regulatory filings from IND to NDA streamlining your compliance journey.

Leveraging Our Process Knowledge

Our process chemistry experts are ready to help with process design, safety evaluation, optimization, Design of Experiments, validation, and continuous improvement. Our capabilities and capacities in flow chemistry and biotransformation support robust yet streamlined manufacturing processes.



KNOW. HOW.

Let Us Deliver For You

At Asymchem, we have been providing reliable R&D and production services of high-quality ingredients to the world's top pharmaceutical companies since 1999.

To see what our know-how can do for you and learn more, contact us at innovation@asymchem.com