Facility-of-the-Year Winner

Pharmadule's high engineering quality and fast delivery are highly recognized in the industry. Integrated plants delivered by Pharmadule have three times won the annual Facility Of The Year Award issued by ISPE (2006, 2011 and 2013).



Merck Irish Plant



Baxter Indiana Plant



Merck New Jersey Plant

About Morimatsu

Morimatsu is a widely acknowledged global provider of core equipment, process systems and engineering solutions. Founded in Japan, it has gradually developed into an international engineering equipment company with the reputation of a 'technology pioneer'. At present, it has manufacturing plants in China plus branches and agents in the United States, Europe, India and the Middle East. Morimatsu specializes in producing diverse types of core equipment and process modules in stainless steel and special materials. Products are widely used in the chemical, pharmaceutical, consumer goods, mining metallurgy, oil & gas refining, and electronic chemicals industries, plus many others. Based on an advanced management concept, a sincere service attitude, and honest cooperation, we have established a good reputation among our many clients.

Pharmadule Morimatsu AB

DanvikCenter 28 131 30 Nacka Sweden Tel: +46 (8) 587 42 000 Mail: info@pharmadule.com

Pharmadule China

No.29 Jinwen Road, Airport Industrial Park, Zhuqiao Town, Pudong, Shanghai, China Tel: +86 (21) 38112058 Mail: info@pharmadule.com

Mail:smp_info@morimatsu-LifeSci.com

Pharmadule Morimatsu Inc

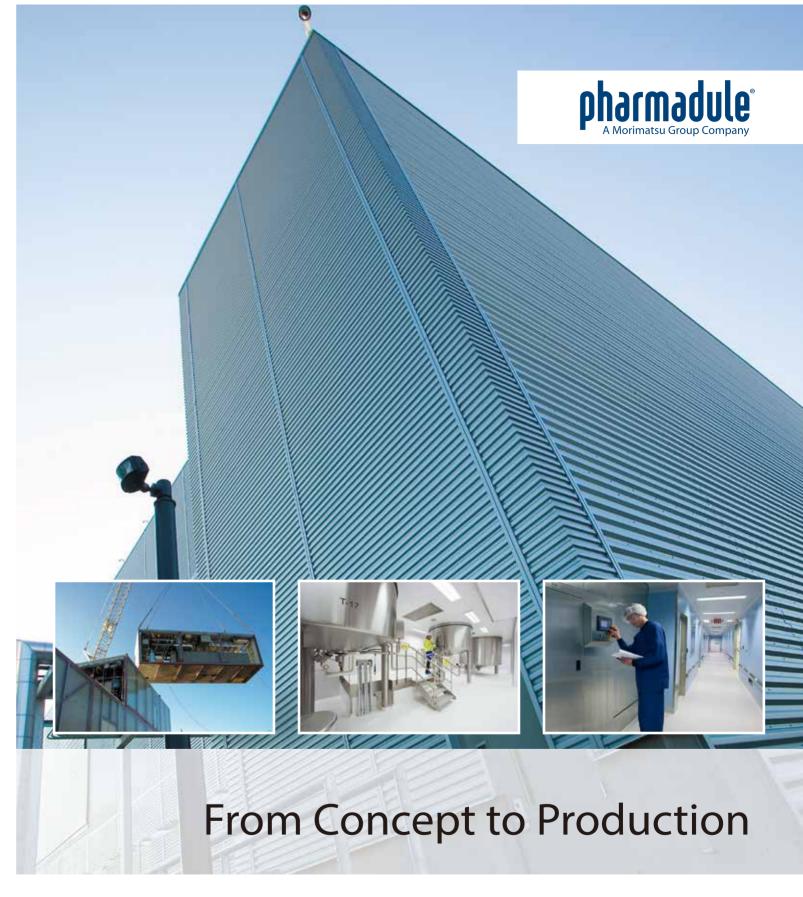
101 Morgan Lane, Suite 303 Plainsboro, NJ 08536 Tel: +1 (908) 722-6845 Mail: info@pharmadule.com

Morimatsu Italy

Centro Direzionale Milano Due, Palazzo Bernini, Via Fratelli Cervi 20054 Segrate (MI) Italy Tel: +39 02124120204 Mail: info@pharmadule.com

Morimatsu Pharmadule Singapore 420 North Bridge Road #03-30, North Bridge Centre, Singapore Tel: +6563820905

pharmadule*
www.pharmadule.com



Delivering integrated modular turnkey projects for the biopharmaceutical, pharmaceutical and consumer goods industries.

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We take you from Concept to Production.

Increased competitiveness in the Life Sciences industry requires service providers like Pharmadule to deliver integrated systems and solutions that prioritize key client objectives such as predictability and risk reduction. With an array of products and services covering design and engineering, off-site construction, modular facilities, process skids and equipment, as well as validation services, we offer industry-specific, complete solutions that pave the way for commercial success.

Since starting operations in 1986, Pharmadule has delivered more than 80 manufacturing plants to the Life Sciences industry worldwide using our modular, off-site-construction concept and technology.

Since 2011 we are a part of the Morimatsu Industry Group. With our head office in Stockholm (Sweden) and operations in Shanghai (China), Milan (Italy), Thane (India) and New Jersey (USA) we are ready to provide our services regardless of your location.

Thanks to the merits of our previous industrial experience and success, we are not only focusing on the Life Sciences industry, but also expanding

into new applications in cosmetics, food & beverages, and consumer products as well as the fine chemicals industries.

As part of the Morimatsu Industry Group, we are in a unique position to offer integrated solutions that include off-site fabricated modular facilities featuring our core process equipment as well as related value-added services.



Our Advantages



One-stop solution

- Integrated turnkey solution from design to qualification
- Integrated modular delivery of plant plus process systems
- Simple interface management
- Multi-disciplinary engineering design management and coordination
- Project management
- Global technical resources and service support



Fast project delivery

- Shorter delivery times
- Deferred investment decision
- More time for process development



Low risk

- Fixed price contract
- Defined implementation schedule
- Consistent high quality
- Strictly controlled construction safety
- Controlled production environment
- Robust and stable supply chain



Flexible solution

- Easy standardization / remote reconstruction / reuse
- Easy to expand and upgrade the plant, expand production capacity
- Combine modular with traditional construction methods





Business scope

- Engineering design services
- Modular manufacturing plants
 including clean rooms, mechanical
 and electrical equipment installations
- Process system modules
- Commissioning and qualification

Application industries

- Biopharmaceutical
- Pharmaceutical
- Consumer goods
- Food

We provide clients with the following professional services:

Design

- Feasibility study
- Conceptual and basic design
- Detailed design
- Process simulation
- Process engineering
- Process and plant automation

Manufacturing

- Project management
- Risk management
- Documentation management
- Procurement / expediting / inspection
- Equipment and process module manufacturing
- Module assembly
- On-site installation
- After-sales service

Qualification

- Qualification master plan (QMP)
- Quality risk assessment
- Commissioning / factory site acceptance test
- Design, installation and operational qualification (DQ, IQ & OQ)
- GMP training

7 - PHARMADULE PHARMADULE - 8

Modular Facilities & **Off-site Construction**

Modular fabrication and off-site construction remove the critical parts of the project from the conditions on the final site. Instead, the design and fabrication of the modular plant, core equipment and utility systems are carried out in the safe and controlled environment of our manufacturing facilities. This results in a clean and efficient final installation.

Our staff is specialized in fabricating facilities for the Life Sciences and Consumer products industries. 75-80% of such projects are finalized in our workshops. As part of the Morimatsu Industry Group, we can supply our clients with our own Morimatsu bioreactors, vessels, CIP skids, formulation systems and other relevant process systems.

Our parallel validation approach enables us to reduce on-site working time to a minimum.

Our modular fabricating concept provides clients with:

- Faster project delivery
- Reduced predictable risks to project implementation
- Great flexibility





Project Execution Flow



Design & Engineering



Shipping & Assembly



Modular Fabrication



Commissioning & Qualification



Process & Utility installations



Handover & Start-up

Modular application



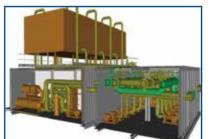
Modular manufacturing facility

- Biopharmaceutical
- Pharmaceutical
- Consumer goods
- Food
- Data Center



Process modules

- Bioreactor module
- Biological purification module
- Pharmaceutical preparation module
- CIP module
- Consumer goods mixing module



Data center

- Cabinet module
- Power distribution module
- Modular refrigeration station



Rapid deployment laboratory

- Nucleic acid testing room
- Heat isolation module
- Biosafety laboratory
- Sampling and processing laboratory



Pharmadule – Your Trustworthy Choice

For more than 35 years, Pharmadule has been dedicated to the pharmaceutical and biopharmaceutical industries. After becoming a member of the Morimatsu group, we expanded our business scope to the cosmetics industry to fully leverage the value of our result predictability.

Project planning needs good partners to successfully turn your needs into reality while at the same time meeting the requirements of scheduling, costs and quality. Pharmadule, with its rich experience and proven track-record, is clearly your best choice.

We offer integrated pharmaceutical and biopharmaceutical manufacturing plants, including feasibility studies, engineering design, construction, production, commissioning, personnel training, etc.

We have successfully delivered more than 80 production facilities to the pharmaceutical and biopharmaceutical industries and completed more than 300 engineering designs and validation services. These projects have been highly appreciated by clients all over the world – and widely accredited by industrial peers.

We are familiar with the latest regulatory requirements and CGMP regulations, and we ensure that the design of each project complies with the local construction codes as well as corporate standards.

We provide global plant design and fabrication. Regardless client location, we render our dedicated services.

We will continue to live up to the acknowledged values of Pharmadule that have been established over the past 35 years.







Solid dosage plant, Merck, Singapore



Vaccine filling plant, GlaxoSmithKline, Belgium



Excellent Product Quality

We always adhere to the spirit of craftsmanship – attention to detail, pursuit of perfection, and mastery of advanced international design concepts to ensure the advancement and reliability of the system we deliver, improving working efficiency, quality and product safety. No matter where the project is delivered, our reassuring product quality means that clients choose long-term cooperation with us. Pharmadule's quality has been recognized by clients globally and has become the accredited industrial standard.









13 - PHARMADULE PHARMADULE

Health, Safety & Environment

Our HSE policies, procedures and guidelines provide clear directions regarding expectations for HSE processes and program implementation. During project startup, a thorough risk analysis is performed together with the client, which serves as a basis for the complete project until handover. Safety-monitoring is highly important for us and our clients.

Our HSE management system is an interlinked part of our Business Management System (BMS) and based on the ISO 18001 and 14001 standards.

Safety for all people involved in our projects is our top priority!

All work in our workshops is guided by Pharmadule's safety policy and procedures. During site assembly a Site Safety Plan and safety organization is developed together with the client.





Sustainable Design

Managing the environmental footprint is important for us and our clients – it's a joint effort. At Pharmadule, we believe that reducing our environmental impact is consistent with our values. We are dedicated to serving the healthcare industry whose goal is to improve the health of all mankind. We undertake sustainable initiatives that will impact the design, delivery and life cycle of your facility.

We have identified that energy consumption in the facility, particularly cooling in HVAC systems, has the biggest impact from a sustainability viewpoint.

As a supplier, we can affect certain areas within the standards, and we take steps to ensure that our delivery fits your goal to reach targeted levels of certification.

However, partnering with us not only means energy savings within HVAC. The architectural surface and choices of materials and equipment are also part of the green design initiative, as is high-quality prefabrication and the opportunity to add renewable energy sources, such as solar panels, to the design.

Modular Plant Reference 1 Irish project







Project scope: Biopharmaceutical facility including seed cell culture with bio reactors, buffer preparation, recovery, purification, weighing and dispense. 3 pcs 5000 L stainless steel bioreactors.



Modular Plant Reference 2

Puerto Rico project







Project scope: Biopharmaceutical API facility for production of insulin including buffer preparation, purification and vacuum drying, chromatography, ultra filtration, high containment bulk filling in refrigerated area. Seismic zone 3.



Modular Plant Reference 3

American project







Project area: 3200 m²

Project scope: Aseptic filling facility for lyophilized and liquid products filled in vials including formulation, washing, filling and lyophilization. Lockers, break room, goods receiving, and storage.

Modular Plant Reference 4 South Africa project





Project scope: Factory for manufacturing of ice cream. Complete turn-key project including a modular processing part and packaging, refrigeration and warehouse buildings based on a pre-engineered building structure. The project included a large number of process tanks by Morimatsu.





Modular Plant Reference 5

American project







Project scope: Manufacturing facility for monoclonal antibodies, mAbs. Complete modular manufacturing building including upstream and downstream processing. Single use equipment.



Modular Plant Reference 6 China Project







Project scope: Manufacturing facility for monoclonal antibodies, mAbs. Complete modular manufacturing building including upstream and downstream processing. Single use equipment.

