

# Industry pure water treatment system



**Chongqing Molecular Water System  
Co., Ltd**



# About Molecular

Found in 2003, Chongqing Molecular Water System Co., Ltd is recognized as a hi-tech enterprise by Ministry of Science and Technology of the PRC. Molecular has three high-tech products recognized by Chongqing Science and Technology Commission. Adhering to the spirit of "professional, high-quality, efficient, honest ", after recent years of exertion and innovation, we have developed into a professional and experienced high-tech company in research, production, sales and construction. In China, we have established subsidiaries or offices in 22 provinces, which are mainly responsible for the sale and service of our product.



Molecular' s products consist of five categories of water purifier: laboratory ultrapure water machine, industrial pure/ultrapure water system, secondary water supply equipment, medical use water purifier and water recycle equipment.

Our products are now widely used in various fields and recognized by many users, e.g. pharmaceuticals, beverages, beer, electronics, electric power, automobile, motorcycle, petroleum, chemical industry, scientific research, etc. We sincerely appreciate the trust and support from more than 10,000 customers.

Molecular sticks to producing superior quality products in the past ten years and has provided service to hundreds and thousands of customers. With love in our hearts, our responsible staff insists on serving high quality products and services to the customers. Molecular beholds the philosophy of "Fulfilling one thing in one lifetime".

# Water - a key factor in industrial production

Many industries have a need to treat water to obtain very high quality water for demanding purposes. Water treatment is, collectively, the industrial-scale processes that makes water more acceptable for an end-use, which may be drinking, industry, or medicine.

Water treatment removes existing water contaminants or so reduces their concentration that their water becomes fit for its desired end-use, which may be safely returning used water to the environment. With the proper treatment, a significant proportion of industrial on-site wastewater might be reusable;

## Features:

With decades of experience in each product sector, Molecular Water can deliver industry-leading technologies that are tailored to suit your operating requirements.

- **customized technical solutions** for the design, build and operation of facilities, networks or plants required to manage industrial water;
- **a wide range of customized services**, tailored to every different requirement;
- **a multidisciplinary expertise in different types of contracts** including the financial and legal aspects as well as in labour relations.

Whether it is standard equipment, integrated systems or turnkey constructions, Molecular Water is committed to meeting the expectations of their customers when it comes to performance, production times and costs.

## Controlling costs for industrial customers

**Often not accurately identified, because they are considered to be inevitable or of secondary importance, costs linked to water production or treatment can be precisely controlled using quantitative and qualitative water cycle management.**

Molecular Water makes an in-depth assessment to work out where productivity gains can be made - operating conditions for the facilities, human resources, energy costs of treating the water - and comes up with exactly the right strategy for the industrial customer.

This can save money in three ways: lower charges for lower water consumption; lower charges for the smaller volume of effluent water discharged; and lower energy costs due to the recovery of heat in recycled waste water.

# Molecular™ Boiler Water Treatment System

## Problems facing industry customers

Boiler water treatment is one of the main process of industrial water treatment. A lack of proper water treatment can lead to the reaction of solids and bacteria within pipe work and boiler housing. Steam boilers can suffer from scale or corrosion when left untreated leading to weak and



dangerous machinery, scale deposits can mean additional fuel is required to heat the same level of water because of the drop in efficiency. Poor quality dirty water can become a breeding ground for bacteria such as Legionella causing a risk to public health, which will also reduce efficiency, shorten plant life and make operations unreliable and unsafe.

## Flexible boiler water solutions that produce reliable and low cost steam supplies

Quality boiler feedwater requires more than chemical treatments. You need customized programs that ensure reliable, cost-effective steam supplies for your critical business processes.

Molecular's boiler water treatment solutions bundle chemicals, consumables, equipment, and value-added services. We designs tailor-made water management systems focused on technical performance, compliance with process and environmental requirements and long-term cost-effectiveness to meet your needs.

- Maximum process productivity
- Lower cost of operation
- Long service life for your critical assets
- Safe and environmentally sound operation
- Ability to focus on your core business

# Minimize corrosion in boiler, feedwater, and steam assets

Corrosion in low pressure boilers can be caused by dissolved oxygen, acidity and excessive alkalinity. Water treatment therefore should remove the dissolved oxygen and maintain the boiler water with the appropriate pH and alkalinity levels.

Molecular's boiler water program combines chemistry, equipment, data analytics, and field services to address these and other problems and provide holistic solutions for enhanced operational efficiency and overall system reliability.

With the proper treatment, a significant proportion of industrial on-site wastewater might be reusable. This can save money in three ways: lower charges for lower water consumption, lower charges for the smaller volume of effluent water discharged and lower energy costs due to the recovery of heat in recycled wastewater.

## Technical specification

Model	Capacity(M3/H)	Diameter	Mpa	Material	Technology
MOLPO-5E	5	DN50	≤1.6	Stainless steel/carbon steel	RO+EDI
MOLPO-10E	10	DN75	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-20E	20	DN100	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-30E	30	DN125	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-50E	50	DN200	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-100E	100	DN250	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-150E	150	DN300	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-200E	200	DN350	≤1.6	stainless steel/carbon steel	RO+EDI
MOLPO-5M	5	DN50	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-10M	10	DN75	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-20M	20	DN100	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-30M	30	DN125	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-50M	50	DN200	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-100M	100	DN250	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-150M	150	DN300	≤1.6	stainless steel/carbon steel	RO+Mix bed
MOLPO-200M	200	DN350	≤1.6	stainless steel/carbon steel	RO+Mix bed

Note: 1. Our system is customized, we can provide best solution according to your requirements.

2. The products model are not all listed in this table. For more items, please consult Molecular Water System's sales engineer.

# Molecular™ Chemistry and Metallurgy Industry Pure Water System

## At a Glance:

In today's global economy, the chemical industry is constantly challenged to improve productivity and efficiency, reduce costs, comply with ever more stringent environmental standards and ensure water supply everywhere on a site at all times. As your business evolves, Molecular Water System, as a full-service company, is at your side to help you define the most appropriate solution regarding your water and wastewater treatment facilities.



## Applications:

- Solvents used in the chemical material production process and cleaning process;
- Ultrapure materials and chemical solvents;
- Laboratory and pilot plant;
- Chemical materials used in electronic semiconductor, integrated circuit boards;
- Production, processing and purification of quartz, silicon materials ;
- High purified ink, inkjet of fax and printer, nano-ink; etc.

## Supporting multi-purpose plants

Fine and specialty chemical companies produce a wide range of chemical substances which are typically produced in low volumes, mainly by batch systems in multipurpose plants. Water needs vary widely in term of quality and quantity.

From industrial water supply to ultrapure water, Molecular Water System can provide you with the most adapted system, supplying the right water quality wherever it is required in your process. Molecular Water System can assist with water supply identification to operation and maintenance of your process water facility.

## Technical specification

Model	Capacity(M3/H)	Diameter	Mpa	Material	Control
MOLCHEM-0.25	0.25	DN20	1	Stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-0.5	0.5	DN20	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-1	1	DN20	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-2	2	DN25	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-3	3	DN32	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-5	5	DN40	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-8	8	DN50	1	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-10	10	DN65	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-15	15	DN80	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-20	20	DN100	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-30	30	DN125	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-40	40	DN150	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCHEM-50	50	DN200	1.6	stainless steel/carbon steel	full-automatic/semi-automatic

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# Molecular™ Electroplating and Coating Industry Pure Water System

## At a Glance:

In electroplating and coating industry, in order to enhance the parts smooth finish, brightness and adhesion, the plating solution requires pure water with conductivity below 15 us/cm- 5 us/cm, and the rinsing of the plate requires below 10 us/cm. Besides, ultrafiltration and reverse osmosis technology can also be used to recycle precious metal ions in the rinsing water, while the outlet water can be used for cleaning again.



## Electroplating full-closed production line and zero discharge water treatment system



- Water purification system in the preparation of plating solution;
- Recycling of rare metals in the electroplating rinsing water;
- Rinsing water recycling system with zero discharge.



## Typical technology

Tap water→ Water pump→ Multi-media filter→ AC filter→ Automatic dosing device→  
 Security filter→ High  
 pressure pump→ 1<sup>st</sup> stage RO→ Intermediate water tank→ High pressure pump→ 2<sup>nd</sup>  
 stage RO→ Pure water  
 tank→ Pure water pump  
 Rinsing water→ Water tank→ Water pump→ Multi-media filter→ Security filter→  
 Ultrafiltration→ Plating solution  
 recycling tank→ High pressure pump→ RO→ Cleaning water tank

## Tehchnical specification

Model	Capacity(M3/H)	Diameter	Mpa	Material	Control
MOLCOAT-0.5	0.5	DN20	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-1	1	DN25	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-2	2	DN32	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-3	3	DN40	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-5	5	DN50	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-10	10	DN75	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-20	20	DN100	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-30	30	DN125	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-40	40	DN150	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLCOAT-50	50	DN200	1.6	stainless steel/carbon steel	full-automatic/semi-automatic

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# Molecular™ Food and Beverage Water Treatment System

## Challenges in food and beverage industry

Water is one of the first ingredients used when manufacturing food, as process water for beverages, ready meals or dairy products. It is also a processing aid used throughout the process (cleaning water, transport water), as well as an energy utility when used as steam

or for refrigeration (boiler feed water, cooling water, ice for preservation). The production of specification quality water for the process and treatment of resulting wastewater are crucial activities in the food industry.



## Improving your water quality while meeting regulations

Municipalities are faced with growing populations, a decrease in available fresh water supplies, and more stringent regulations. Food production sites must now comply with numerous requirements in the sanitary, economic and environmental domains. Cities worldwide are turning to Molecular's drinking water treatment solutions to help optimize resources and provide high-purity water to their residents. Molecular is ready to help you promote food safety and achieve regulatory compliance.

Molecular technology can:

- Meet the increased water demands of a growing population and overcome water scarcity issues
- Treat challenging source water while meeting or exceeding regulatory requirements
- Deliver high performance water purification at the lowest life-cycle costs
- Address your water needs within your current plant footprint

## Reduce operational costs, enhance product quality as well as boost the brand perception

Over the years, we've worked to develop a broad portfolio of products designed to improve even the most challenging of water conditions. Our process of continuous improvement assures that you have the latest, most effective products, which ensures your water is managed perfectly and consistently.

Molecular Water System provides this industry with innovative technological solutions and offers a range of services, from facility maintenance and on-site technical assistance to the complete management of the industrial water cycle. We help customers to control production costs, optimize industrial performance and remain competitive in the face of pressure from the retail circuits. The products are widely used in the world and receive recognition from all users

### Technical specification

Model	Capacity(M3/H)	Diameter	Mpa	Material	Technology
MOLFB-0.25	0.25	Dn20	≤ 1.0	Stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-0.5	0.5	Dn20	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-1	1	Dn25	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-2	2	Dn32	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-3	3	Dn40	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-5	5	Dn50	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-10	10	Dn75	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-20	20	Dn100	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-30	30	Dn125	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-40	40	Dn150	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic
MOLFB-50	50	Dn200	≤1.0	stainless steel/carbon steel	full-automatic/semi-automatic

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# Molecular™ Microelectronics Ultra-pure Water Treatment System

## Water in microelectronics industry

Microelectronics industry and large-scale integrated circuit needs a large number of high pure water, ultrapure water to clean semi-finished and finished products. The higher integration level of the integrated circuit, the stricter requirements for the water quality. Therefore, it has strict requirements for the ultrapure water treatment technology, including simplicity, automation, continuous production and sustainability etc. Thanks to its network of technical experts, Molecular Water System is able to meet the demands of its customers around the world from technical support through to the management of the entire water cycle.



## Consistent ultrapure water (UPW) production

**Consistent ultrapure water (UPW) production is critical for microelectronics manufacturing. Molecular helps protect product yield, generate savings and improve environmental compliance.**

Molecular builds fully integrated UPW and reclaim/recycle systems for the demanding electronic manufacturers. It provides with comprehensive range of services, from providing technical assistance to being completely in charge.

Remove impurities, protect valuable membranes, and maintain your plant. The system requires careful testing and design early in the project life cycle. Molecular's solution starts with pre-treatment components that protect membrane systems by removing suspended solids and impurities. After careful analysis of your source water and conservation needs,

customized designed systems are then fitted to your application.

To support the lifecycle of the plant, a complete line of products and services are available to help you stay current, connected, in production and on budget.

- Reduction in overall water consumption
- Modular designs adapt to site and project specifications for a unique solution
- Engineering and field services are available to design, commission, or start up systems

## Technical specification

Model	Capacity(M3/H)	Diameter	Mpa	Material	Control
MOLEL-0.5	0.25	Dn20	1.6	Stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-1	1	Dn25	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-2	2	Dn32	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-3	3	Dn40	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-5	5	Dn50	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-10	10	Dn75	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-20	20	Dn100	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-30	30	Dn125	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-40	40	Dn150	1.6	stainless steel/carbon steel	full-automatic/semi-automatic
MOLEL-50	50	Dn200	1.6	stainless steel/carbon steel	full-automatic/semi-automatic

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# Molecular™ Mobile Drinking Water Treatment Equipment

## Water-- A key factor in field operation

For field operation, it's very important to provide sanitary and clean water for the personnel. Due to the remote distance, it can neither be delivered by pipeline nor by car transportation. Molecular Water System designs mobile water treatment equipment to meet their need, which can use the local water as source, after multi-step processing and purifying, finally turns it into standard drinking water. We have multiple models and specifications to meet customers different needs including: emergency relief, field operation and construction team etc.



## Flexible mobile water offerings let you focus on your business while Molecular takes care of the water

With just a call, Molecular provides water when and where you need it. Molecular's on-demand mobile water treatment solutions include reverse osmosis, filtration, demineralization, softening, and deoxygenation treatment. Whether it is standard equipment, integrated systems or turnkey constructions, Molecular is committed to meeting the expectations of their customers when it comes to performance, production times and costs.

Molecular provides innovative technologies for every stage of the water cycle from the design and construction to producing process. When responsible for the outsourced management of services, Molecular is also committed to high performance levels for its facilities. These performance commitments can be seen by the fact it guarantees results in its outsourcing contracts.



## **Mobile Water Treatment Features**

GE's mobile water treatment solutions fall into four system categories: resin, membrane, filtration, and other water treatment. Routine applications include:

- Clarifier by-pass / outage projects requiring total suspended solids (TSS) removal
- Boiler feedwater to all levels of purity
- Deoxygenation of feedwater
- Condensate polishing
- Total organic carbon (TOC) removal
- Water recycling
- Steam blow boiler make up
- Water availability ahead of permanent plant commissioning
- Special applications where improvements in water quality or quantity can provide value for your processes

## **Customer list**

After decades of development, Molecular has become one of the leading brand in China about water treatment, and gains highly praise from our customers. Over 10,000 well known and emerging brands, including 100 of the top 500 companies have selected Molecular. We believe our success in building these relationships reflect the innovative and high value added services along with our ability to positively impact our clients' business. Great work can only come from great partnerships. Here are just partial clients of Molecular.



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