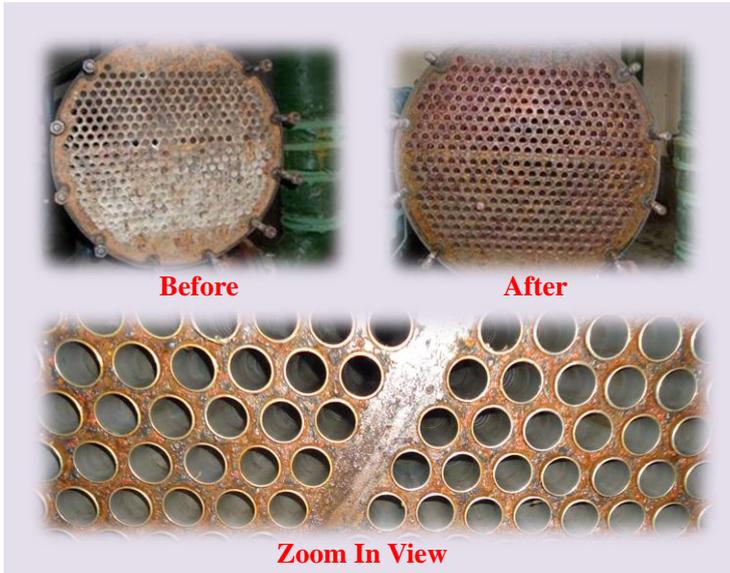




MIBO INTERNATIONAL CORP.

# 1<sup>st</sup> TECH

## Biodegradable Descaler



### Advantage

- ✧ Biodegradable
- ✧ Easy to use
- ✧ Fast and efficient
- ✧ Low cost with High performance/price ratio
- ✧ Safe and environmentally friendly: non-corrosive, non-hazardous, and non-toxic
- ✧ Widely be used: can directly apply to clean equipments made of Aluminum, Aluminum alloy, Cooper, or Stainless steel; even workable for the system made of multi materials

### 1<sup>st</sup> TECH Applications:

1<sup>st</sup> TECH Biodegradable Descaler is a full-synthetic, compatible and safe, high-effective, environmental friendly cleaner that can apply to clean water scales, limes slurries, rust stains and other sediments in the industrial or commercial water system applications made of the following materials:

Aluminum	Stainless steel	Carbon steel	Brass	Ceramics
Chrome plate	Copper	Cooper nickel	Fiber	Glass
Lead	Plastic	PVC	Red copper	Rubber
Teflon	Titanium	More...		

*For other material is not on the list above please consult the manufacturer to submit a material sample laboratory test*

**1<sup>st</sup> TECH Biodegradable Descaler is widely used in the following industries:**

- ✓ Automobile
- ✓ Chemical
- ✓ Food and Beverage
- ✓ Glass
- ✓ Maintenance Service
- ✓ Manufacturing
- ✓ Marine and Shipyard
- ✓ Medical
- ✓ Oil and Gas
- ✓ Power Plan
- ✓ Pulp and Paper
- ✓ Rubber and plastics
- ✓ Steel mill
- ✓ Textile

### PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid  
 Boiling Point: 103±1 °C  
 Color: Amber color  
 PH: Generally ≈ 1  
 Odor Characteristics: Comparable to almonds  
 Solubility in Water: Miscible  
 Specific Gravity (Water=1): 1.050±0.005  
 State: Liquid  
 Viscosity: Comparable to water

*For more information, please contact or scan the dimensional code*

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# 1st TECH Applications Range

1st TECH Biodegradable Descaler has been widely used by our clients on cleaning the following equipment



Brazed Shell and Tube Heat Exchanger



Atlas Copco Compressors



Gasketed Plate Heat Exchangers



CIAT Shell and Tube Heat Exchanger



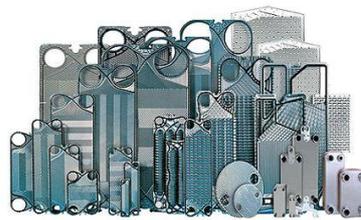
Samsung Industrial Air Compressor



CIAT Plate Heat Exchanger



CIAT Shell and Tube Heat Exchanger



Cipriani Plate Heat Exchanger



CITA OZONAIR Heat Exchanger



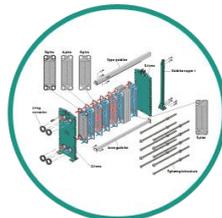
Sea Water Condenser



Elliott Compressor



FSCURTIS Air Compressors



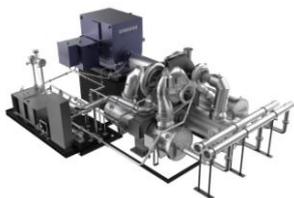
Hisaka Plate Heat Exchanger



Elliott Compressor



Sullair Compressors



Samsung Engineered Air Compressor for ASP



Rubber Tube Sheet Shell and Tube Heat Exchanger



Quincy Compressor



McQuay Refrigerant Compressor



York Refrigerator



McQuay Refrigerant Compressor



McQuay Refrigerant Compressor



FSCURTIS Air Compressors



SPX Heat Exchanger



Quincy Compressor

1. **Paper industry:** roller, air compressor, after cooler, calender bowl, chemical scrubber, closed cooling system, condenser, cooling tower, gas cooler, heat exchanger, intercooler, filtrate tank, filtrate pipe, vacuum filter, vacuum pump, slush pump, lime pump, evaporimeter, digester, scrubber, flow box, squeezer, indirect cooler, absorption plant, gas steam room, steam heater, cooling system, motor body, compressor body, combustion motor, couch roll, etc.
2. **Rubber and plastics:** mould, boiler, cooler, condenser, vacuum pump, Bernie mixer, air compressor, absorption cooler, temperature control system, pipe, flanging machine, extruding machine, intercooler, aftercooler, cooling tower, heat exchanger, air compressor body, calender bowl, closed cooling system, etc.
3. **Iron and steel industry:** electric-arc furnace, connecting device, continuous casting equipment, condenser, air gas generator, motor room radiator, transformer radiator, vertical sewage pump, etc.
4. **Marine and Shipyard:** hulls, buoys, boilers, seacocks, condensers, keel coolers, sea strainers, tube bundles, propulsion units, air compressors, waste heat boilers, feed water heaters, pumps, chillers, radiators, fire mains, diesel engines, intakes screens, lube oil coolers, cylinder jackets, heat exchangers, air conditioning units, transmission coolers, water pumps and impellers, propellers, generators, evaporators, bow thrusters, booster heaters, desalination units, all types of coolers, waste water piping, engine cooling systems, main and aux sea water systems, etc.
5. **Automobile industry:** extruding machine, water tank radiator, injection molding machine, closed cooling system, etc.
6. **Glass industry:** mould, pipe, exchanger, air compressor, etc.
7. **Beverage industry:** sterilizer, embellish washing trough, chiller, bottle washer, carbon dioxide maker, hot water exchanger, etc.
8. **Food industry:** sterilizer, air washer, ice machine, steam meter, cooling tower, process equipment, cryogenic box, evaporative condenser, etc.
9. **Manufacturing industry:** cooler, vacuum filter, vacuum furnace, electric furnace, etc.
10. **Petroleum refining industry:** pipe, pump, converter, exchanger, oil cracker, air compressor, etc.
11. **Textile industry:** cooler, extruding machine, aftercooler, air washer, condenser, exchanger, air compressor, etc.
12. **Medical industry:** distiller, sterilizer, condenser, vacuum pump, heat exchanger, closed cycle system, etc.
13. **Chemical industry:** dryer, reactor, extruding machine, washing machine, vacuum pump, condenser, steam boiler, etc.
14. **Electric power industry:** boiler, turbine, transformer, cooling tower, air compressor, hydrogen cooler, lube oil heat exchanger, etc.
15. **Metallurgical industry:** cooling ventilation fans, furnace door, sprinkler head, vacuum furnace, mould cooler, turning furnace, etc.
16. **Service industry:** central air-conditioning system, heating system, water heater, etc.

# The Importance of Equipment Cleaning

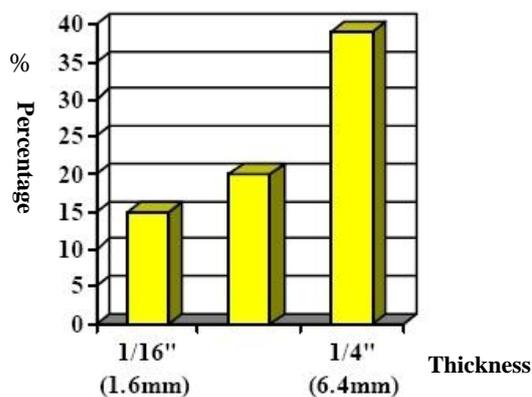
Mineral scale occurs wherever circulating water exists, and it forms very fast (generally less than 3 weeks). Even a very thin layer, it will also cause insulation, make equipment inefficient, increase cost, and in some serious cases, it will shut down the whole system and even cause explosion. These problems have already existed in different fields, and are becoming worse and worse.

## 1. Problems caused by scale

- Conduction of heat reduces or disappears
- Equipment operation efficiency reduces, output drops
- Lower flow rate, flow measurement is not accurate
- Corrosion problem, equipment life service shortens
- Energy consumption increases
- Scale affects product quality
- Causes shut down
- Causes explosion

## 2. Effect on energy consumption caused by scale

According to some research data, 1.5mm thick scale could increase energy consumption by 15%, while efficiency could drop greatly.



Percentages of efficiency decreased, in relation to scale thickness.

# I. The Importance Of Central Heating System Plate Heat Exchanger Cleaning

## Scaling Problems of Plate Heat Exchanger

- Circulating water forms scale when heated (Scale thickness increase 1 mm, heat transfer efficiency decreases 8%-9% or even more)
- Outside impurities make pipe network blocked
- Rust from inner surface of the pipe forms rust mud



These problems have greatly reduced the efficiency of the heat exchanger, also have damaged the heating system caused by scaling and corrosion.

- Energy consumption increases, and operating cost goes up

*After scale and biological slime form in the heating system, the heat transfer efficiency of the heat exchanger declines, the flow area of the circulating water decreases, and the flow resistance increases. As a result, energy consumption in the whole operation process increases dramatically, and so does the heating cost.*

- Work efficiency declines, and heating result affects

*The scale in the heating system makes heat exchanger inefficient, resulting the media temperature difference between the inlet and outlet shrink, and then lowers the heating efficiency.*

Heat loss caused by scale ( CaCO <sub>2</sub> mainly)						
Scale Thickness (mm)	0.5	0.8	1.0	1.25	1.6	2.2
Heat Loss (%)	3.5	7.0	8.0	10.0	12.5	15.0

- Shorten the Service Life of the Equipment

*Scale and slime would seriously affect the normal operation of the system. Due to the corrosion problem, the metal materials in the heating water system would be damaged, and this damage would definitely shorten the heat exchanger's service life.*

## By using 1<sup>st</sup> TECH Biodegradable Descaler:

- Clean away all the scale, slime, and corrosion products in the circulating water system. Ensure the system operate safely, normally, and with a high efficiency
- Reduce operation cost, save energy, save power consumption or heat consumption by 20%~30%
- Protect heat exchanger plate, and prolong service life

## II. The Importance Of Central Air Conditioner Cleaning

As is known to all, air is one of the main ways to spread epidemic diseases. People have been aware of the importance of a quality environment while chasing a healthy life. When we pay more attention on environment problems, such as the ozone layer, atmospheric pollution, and emissions, indoor environment pollution has been the primary pollution which threatens our health.

With the development of economy and improvement in people's living standards, central air condition and ventilation system have become an important facility in many buildings. People have been used to work, study, and live in an air conditioned room. However, do we really have nothing to worry about? According to the World Health Organization's statistics, burden of disease caused by indoor air pollution is five times more than that caused by outdoor air pollution. As the growth of people's recognition of the disease transmission (such as legionella) by using air condition, especially under the threat of H1N1 in year 2009, and H7N9 in 2013, people have realized the importance of air condition cleaning.



### By using 1<sup>st</sup> TECH Biodegradable Descaler:

- Clean away all the scale, slime, and corrosion products in the ventilation system. Ensure the system operate safely, normally, and with a high efficiency
- Reduce operation cost and save energy consumption
- Prevent future problems and improving the air you breathe