

FIRST POLICY ENVIRONMENT WACHEM

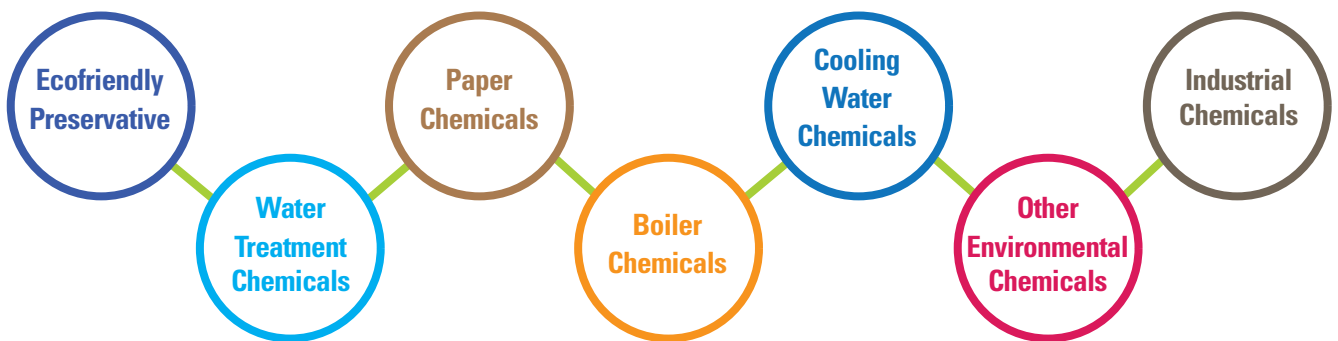


New Renewable Energy

Wachem Co.,Ltd - we do our best to do our part to preserve clean and clear environment for better quality of life.



Business Areas



In order to protect environment from industrialization today, we operate the water treatment systems(water cleaning treatment, boiler treatment, waste water treatment), which treat such polluting substances as waste water, wastes, by-product from various industrial sites. And we also provide other chemical products such as paper chemical, various eco-friendly Bio-Cide and specialized cleaners.

Wachem's corporation spirit is to help the customers to prevent themselves from causing pollution and to recycle wastes by providing them with our accumulated know-hows, which ultimately contributes to preservation of environment.



Wachem Co.,Ltd - Environment is our priority
We Care The Environment First

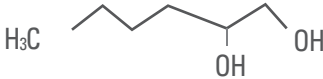


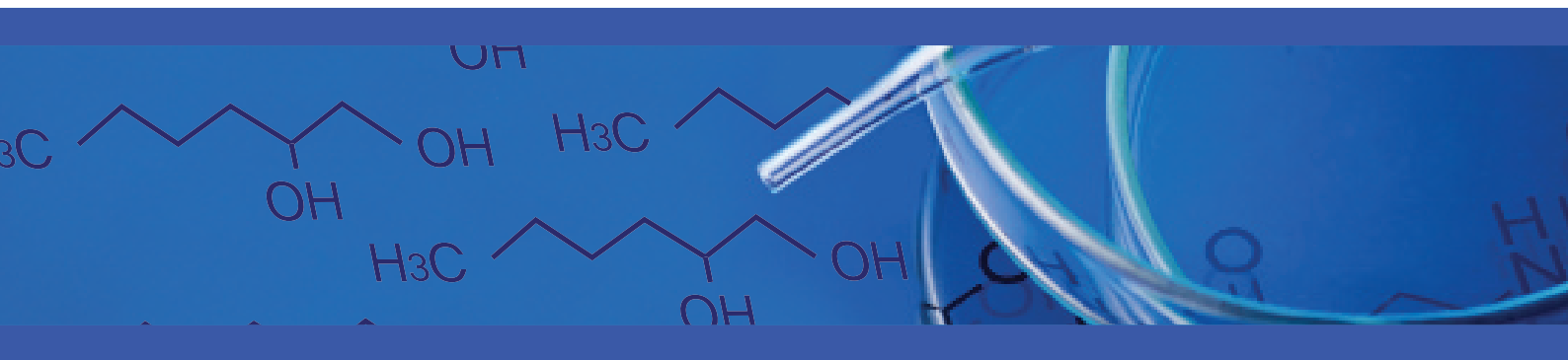
Eco-friendly preservative

1,2- Hexanediol

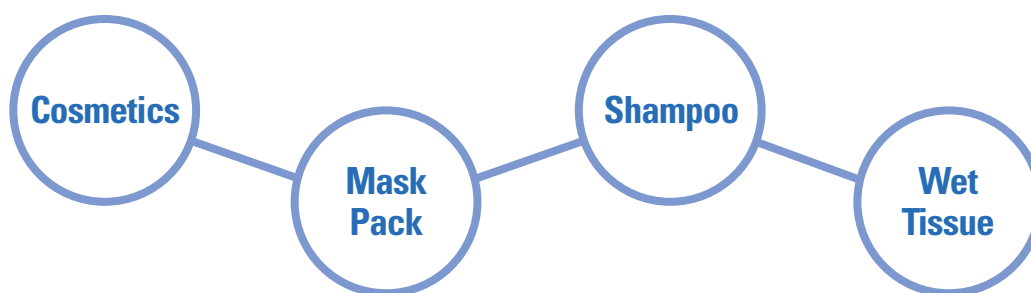


Despite its strong antibacterial power, it isn't stimulating to skin and can be used to produce none preservative type cosmetics as it functions as pre-servative of natural extracts. Moreover, it is an useful alternative to Parabens and does not affect the nature of cosmetics. It can be used to produce other products than cosmetics, such as detergent, wet tissue and ink.

Ingredient Name	1,2- Hexanediol
INCI	DL-hexane-1,2-diol (1,2-Hexanediol)
Definition of the Component	An multifunctional alternative component to Parabens, which is known for its harmfulness.
Molecular Structure	
A Rational Formula	$C_6H_{14}O_2$
Mix Limit	1~3% (In case of Shampoo : 2%, Maximum 6 months expiration period)
Component Trait	As an alternative component to Parabens, due to its anti-bacterial and moisturizing trait, it is used as natural extracts' preservative. Despite its anti-bacterial power, it is not harmful to skin and compatible with water and alcohol, so its usage can be extend to other products.
Byname	1,2-Dhydroxy Hexane, D,L-Hexane, 1,2-Diol
Purpose of Use	Moisturizer, Antibacterial agents, Preservative, a Solvent
Skim Deep Score	0 (0~2 : Low, 3~6 : Middle, 7~10 : High)
Harmfulness	Not known
Product	Transparent liquid product
Precautions	Due to its moisturizing and antibacterial trait it should be mixed with other components. As a strong solvent it reduces viscosity.



1, 2- Hexanediol Usage Example

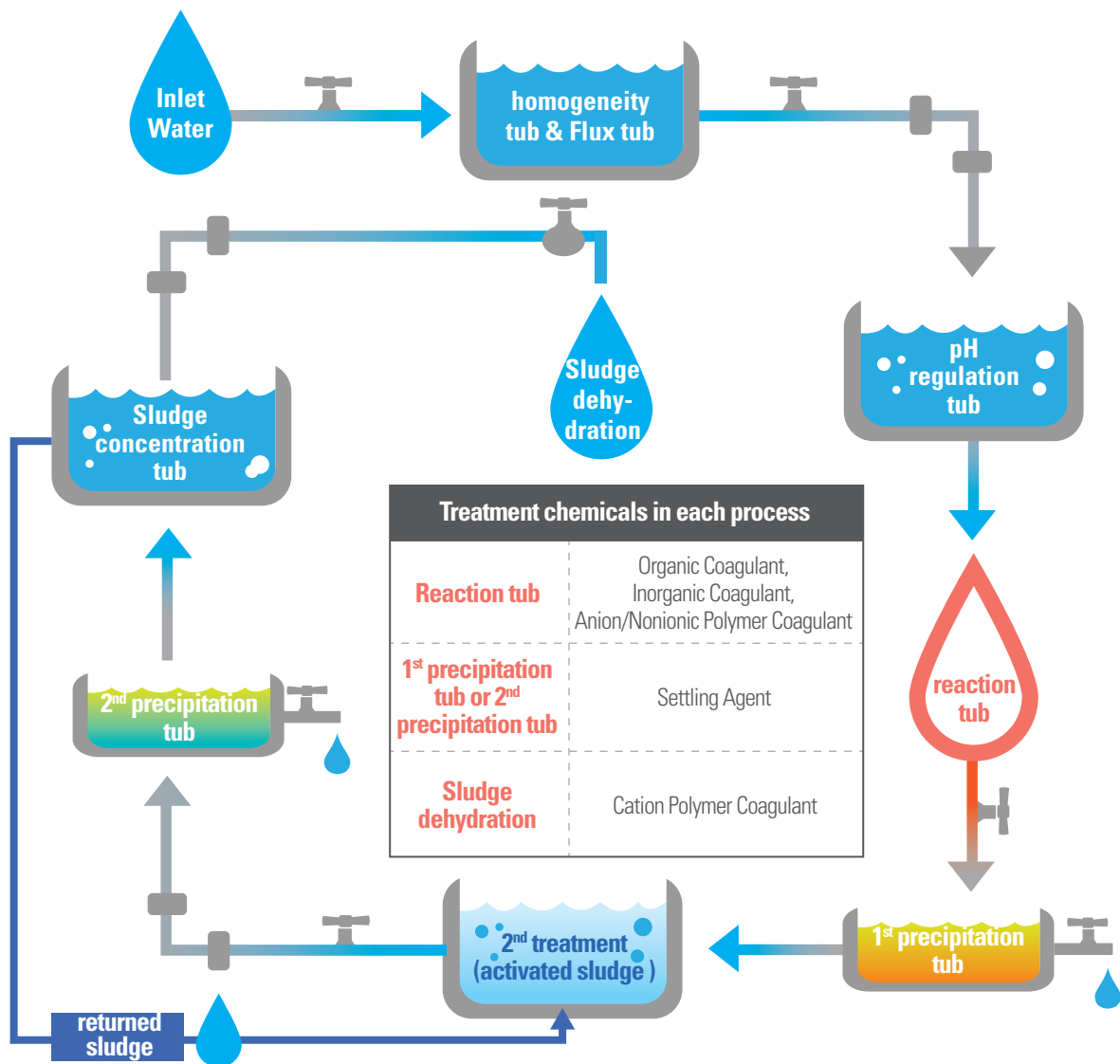


Comparing 1,2- Hexanediol with Existing Synthesis Preservatives.		Existing Synthesis Preservatives	1,2- Hexanediol
Preservation Power and etc		Adding 0.1~0.5% exerts strong enough preserving power.	Should add 2% for an effect preservation / Also function as moisturizer.
Toxicity		Bad effect on skin : aging & infection. Increasing the chance of cancer. Decreasing sperms in number. Increasing the chance of testicular cancer. Causing many allergies. Nerve toxication. Causing skin infection.	None toxic effect known
Problems		Due to its toxic traits, it is increasingly less used.	Due to impurities , it gives off a unique odor, which is an challenge in using. However, the new technology of our company can completely removes such a odor (A+ quality)

Water treatment Chemicals



We do our best to develop fine technologies of water treatment of all process for various kinds of wastes through precipitation (1st treatment process), microorganism (2nd treatment process), recycle of waste water, high tech treatment of such nutrient as nitrogen and phosphorus, and the reduction and stabilization of sludge.





Organic Coagulant

As strong cation polymer, it is free from pH changes and removes suspension substances with a small amount. Or it can effectively increase the reduction of sludge, which leads to more efficient treatment and reduction on treatment cost.

Result from using : Increasing the efficiency of water treatment, improvement o turbidity and increasing the efficiency of removing SS, COD.

Inorganic Coagulant

Has an excellent ability to congeal fine suspension particles for treatment of suspension water wastes. Also can effectively settle Floc so it is used in brewery, dyeing factory and leather factory due to its cheap price.

Typical Products : Alum, PAC, iron sulfate, iron chloride, slaked lime, magnesium hydroxide.

Result from Using : Increasing the efficiency of water treatment , improvement on turbidity And increasing the efficiency of removing SS,COD.

Polymer Coagulant

Changes stably dispersed suspension particles into Floc, which can be treated as solid-liquid separation, by polymer coagulant and congeals raw sludge from water coagulant treatment and extra sludge from microorganism treatment so that it can widen particle diameter for easier solidliquid separation.

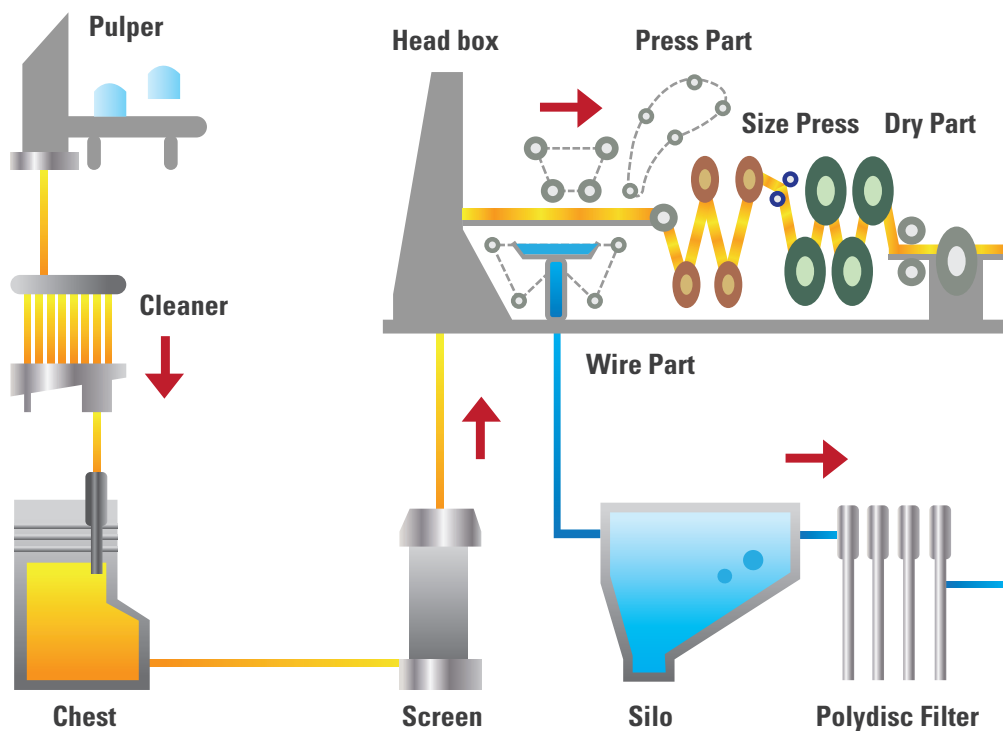
Typical Products : Anion, Nonion, Cation Coagulant.

Result from Using : Increasing the speed of settling and dehydration by maximizing the size of Floc.

Settling Agent

As polymer compound used both in physicochemical and biochemical, it can be used in any range of pH so it urges settling and increases the efficiency of dehydration by solid-liquid separation.

Result from Using : Increasing the speed of settling by improving congealing for effective removal of SS and COD.



Scale Inhibitor

Put into Nash(vacuum) pump, it can effectively prevent forming of scale and when put into pure water system during the process for prevention of scale, it is effective. A chemical put into water supply for boilers and heat exchangers to prevent scale and corrosion.

Result from using : Prevention of corrosion and removal of scale.

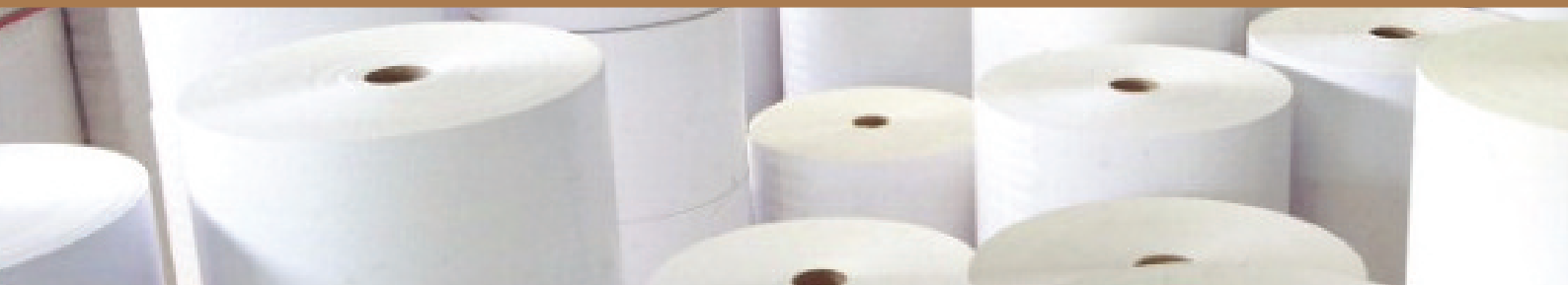
Preservative/Slime Controller

Rather than sterilizing microorganism, it maintains its numbers in a limited amount and restrains its growth.

Typical Products : Sward slime controller, Starch and Size liquid preservative.

Pigment and coating color preservative

Result from Using : Controlling forming of slime and microorganism in chemical pipes.



Cleaner

An inorganic compound which is attached to a pelt used when producing paper. Removing and cleaning polluting substances such as pitch, talc, ink by-product. Efficient for removing scale or dust inside different kinds of tanks, pipes.

Result from using : Cleaning or removing polluting substances.

Settling Agent

In the process of paper producing, it removes anion substances. And by restraining forming of polluting substances and settling adjunct, it reduces production cost and improves productivity.

Result from using : Minimizing the changes on property of matter caused by added chemicals.

Suspension Chemical / Coagulant

By congealing fine particles inside paper material to prevent them from leaking to water, as a dehydration chemical it minimizes the effects from changes on producing paper process.

Result from using : Improvement of retention of additives such as fine fibers and fillers.

Surface CMC

It refers to spreading CMC on surface of paper by using size press. It improves flexibility, leveling, strength of paper and is used to add water-proofing quality to pulp as it is hydrophilic.

Result from using : Improving water-proofing quality.

Antifoamer / Degassing Agent

Antifoamer : Restrains foaming from coating color and CMC.

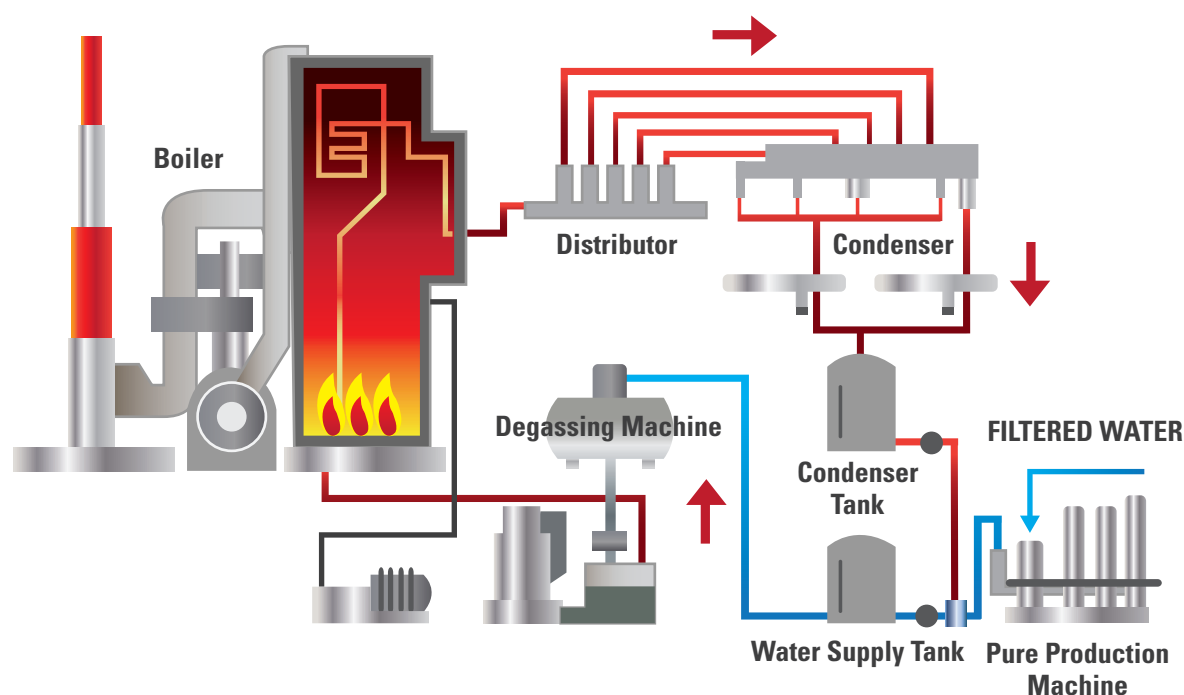
Degassing agent : It is effective in early stage of paper producing process, in which much of water is used as it basically removes bubbles in the process, thus contributing better quality of product and better work efficiency.

Typical Products : Alcohol type, Silicon type, Ester type.

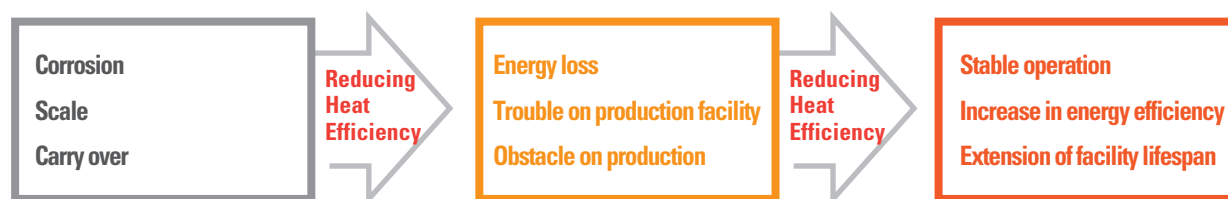
Result from Using : Improves drainage and paper producing efficiency by removing bubbles in process.

Boiler Water Chemicals

In a boiler system there are three problems : scale, corrosion, carryover caused by water system it uses. Those problems can cause a boiler's heat efficiency, leading to significant energy loss. If the problems are serious kind, they can cause significant loss in production caused by the damages on the pipes. With analysis on the traits of a boiler water system, we want to realize stable operation of a boiler by recommending most appropriate water treatment program.



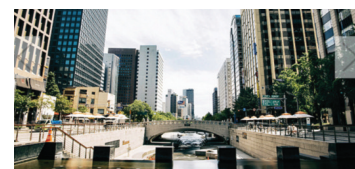
Application of boiler chemicals program





Integral Management

Applied in small/middle sized factories or building, as it includes deoxidizer, scale restrainer, pH controller, it restrains scale and corrosion at the same time. According to type of boiler system and the quality of water, product to be used is decided.



Result From Using : Prevention of scale and corrosion in a integral boiler system.

Pipe Cleaner

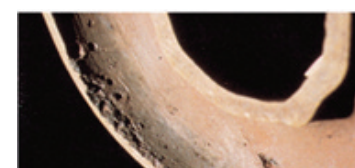
As a anti scale chemical used in low/high pressure boiler system, when water supply is not smoothly done, it can restrain corrosion and scale maintaining the inside of pipes clean.



Result From Using : Prevention of corrosion and scale in a boiler.

Deoxidizer

Removes dissolved oxygen, which is a primary cause of corrosion in boiler system. And catches and stabilizes active oxygen and radical and restrains corrosion by creating protective film on boiler metal.



Result From Using : Prevention of corrosion by removing dissolved oxygen and carbon dioxide.

pH controller

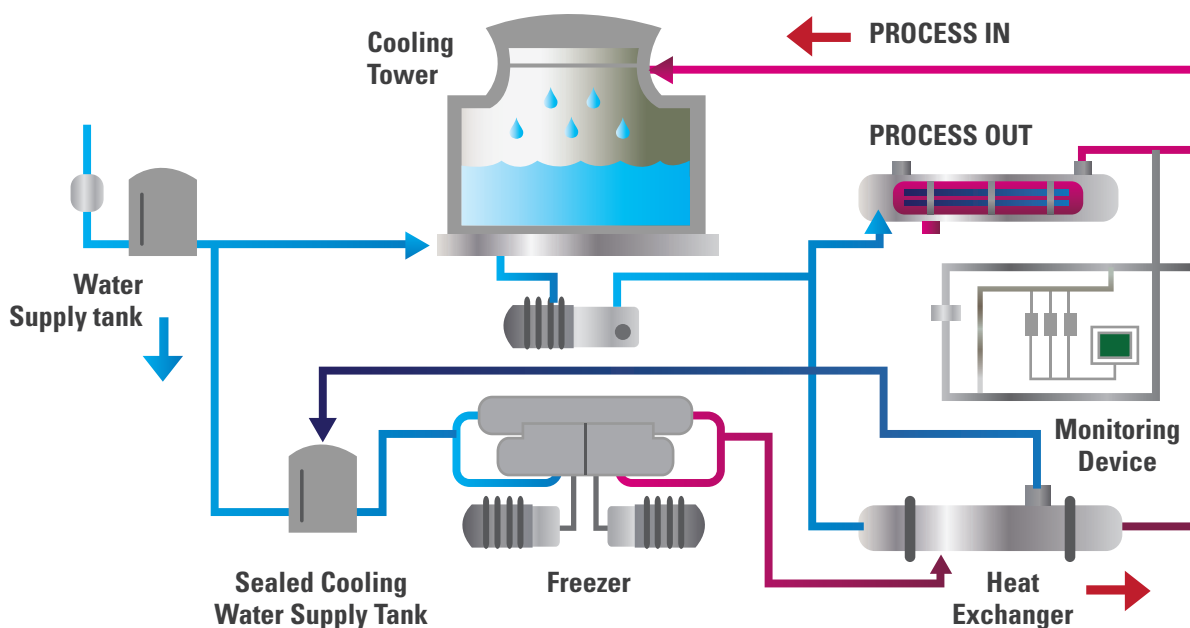
By preventing of reduction in pH mainly cause by CO_2 and in a boiler condensing system, it can maintains condensing pipes clean, ultimately preventing corrosion cause by CO_2 .



Result From Using : Prevention of reduction in pH and corrosion caused by CO_2 and O_2 .

Cooling Water Chemicals

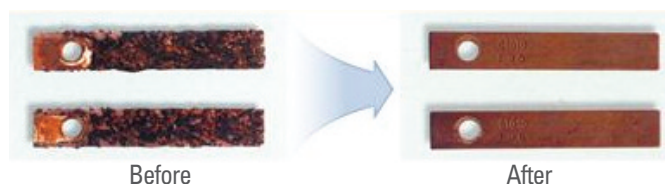
Sterilize pathogenic germs included in cool wind from a cooler. Especially as total care water treatment chemical they prevent slime, scale, corrosion in cooling water system and sterilize legionella germ, maintaining cooling tower clean.



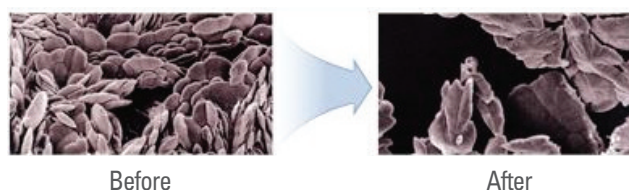
Anti-scale, Corrosion Chemicals

In cooling systems with various water qualities, they effectively restrain scale and corrosion for best water treatment effect.

The Effect of Preventing Corrosion



The Effect of Preventing Scale



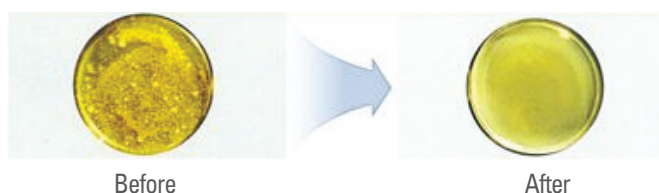


Sterilizer of Oxidative, Nonoxidative Microorganism

Oxidative : Restrains the growth of such microorganism as Bacteria, Fungi, Algae, Legionella and effectively removes slime.
Appropriate for cooling water system with high calcium density or severe fouling.

Nonoxidative : Removes insulation effect caused by microorganism to improve heat exchanging efficiency.

Slime Prevention Effect



Other Environmental Chemicals

Category	Chemical Name	Grade	Result from Using
Special Chemicals	Glue	WC-SA663J	Acrylic & aqueous glue
	Integral Cooling Water Treatment Chemicals	Cool Shot	Removing Legionella germ and preventing scale and corrosion in a cooling tower
	Surfactant	WC-TW81	Nonionic surfactant
Basic Chemicals	Sodium hydroxide	25%, 50%	Controls pH & Recycling ion exchange resin
	Hydrochloric Acid	35%	Controls pH & Recycling ion exchange resin
	Sulfuric Acid	70%, 98%	Controls pH
Prevention of Air Pollution	Quick lime	100%	Desulfurization in a combustion furnace
	Slaked lime	20%	Removing harmful gas, pH control, desulfurization, settling effect in water treatment
	Urea Water	40%	Collecting ventilation gas
Sterilization & Deodorization	Hypochlorite	12%	Microorganism sterilizer
	Hydrogen peroxide	35%	Microorganism sterilizer & deodorizer
	Preservative	WC-D200	Various industrial preservatives

Industrial Cleaners



We develop acidic and alkali inorganic cleaners used in power plant, refineries, petrochemical plant, steel manufacturing plant and nuclear power plant in all over the world, and we want to be a stepping stone in a national industry by localizing the production of eco-friendly cleaners for reduction of costs and maintain facilities.

Multifunctional Cleaners

As transparent liquid, it has a strong power of cleaning inorganic scale substances. And also as scale remover, it is effective in removing scale caused by such metallic salts as Ca^{++} ion.

Oil & Grease Removal Cleaners

Removes dissolved oxygen, which is a primary cause of corrosion in boiler system. And catches and stabilizes active oxygen and radical, and restrains corrosion by creating protective film on boiler metal.

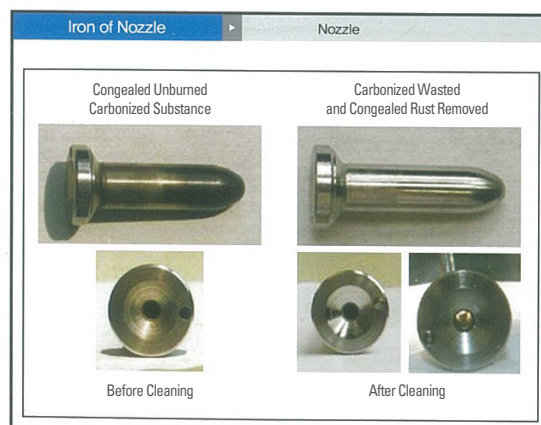
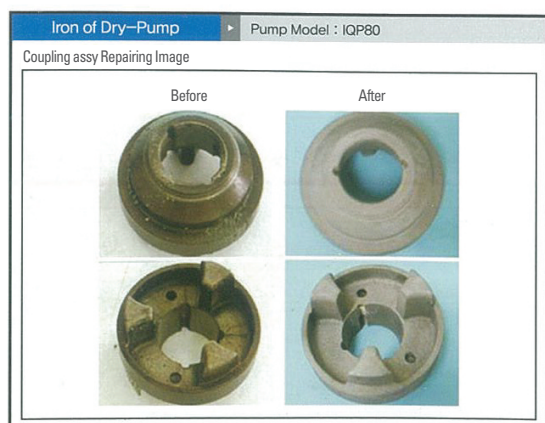
Stainless Cleaners

Effective in cleaning various pipes, cooling tower facility, metal surface treatment, boiler, SUS, and copper alloys.

Anti-Scale Cleaners in Heating Systems

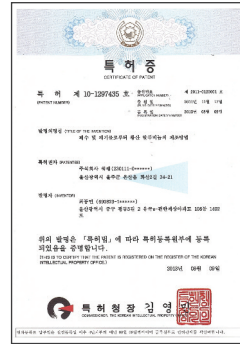
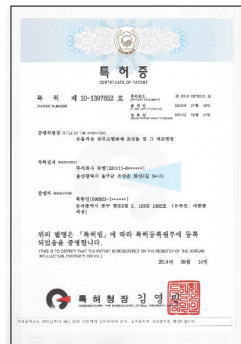
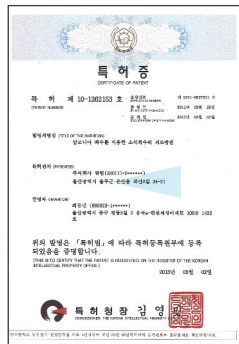
Removing metal salt scales caused by Si, Ca, which are not cleaned by existing cleaners. Examples of repair.

Case Related Repair

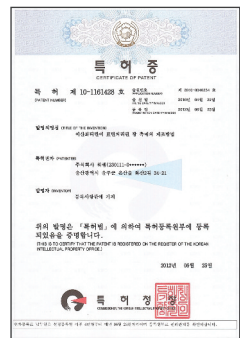
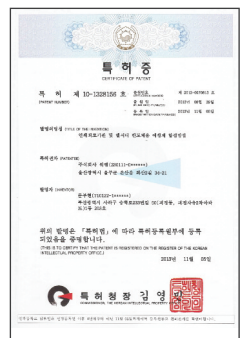
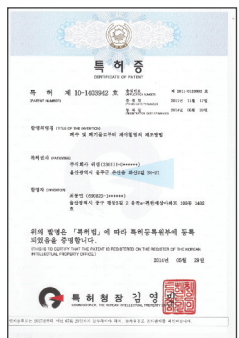




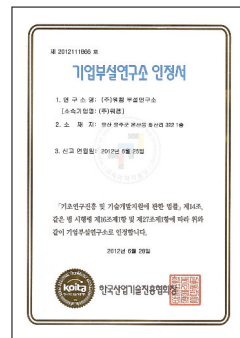
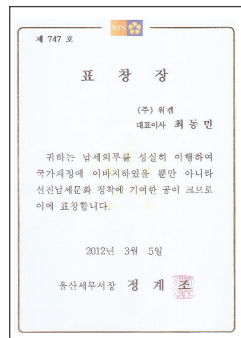
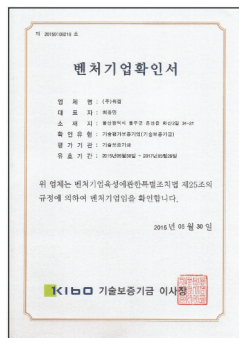
Patent and Certification



- Patent on producing slake lime water out of ammonia waste water
- Patent on producing oil solidifier for absorbing oil
- Patent on producing photo catalyst surface-treated with titanium dioxide



- Patent on compounding etching agent for printed-circuit board and LCD semiconductor
- Patented manufacturing method of ferric salt from wastewater and waste.
- Patented manufacturing method of aluminum sulfate from wastewater and waste.

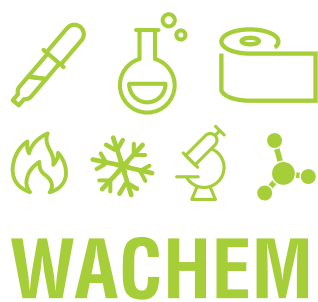


- Venture company certificate
- Exemplary tax payer reward
- Research center certificate



- Pictures of research center inside /outside

Manufacturing date : 2016. 11



Head office & plant

(44992) 56-11, Hoehak 3-gil, Onsan-eup, Ulju-gun, Ulsan City, Korea

Tel. 82+52-237-2923 Fax. 82+52-238-0544

E-mail. wachem21@naver.com www.wachem.co.kr