



## Super Alkaline Ion Water

Protects the safety and health of the workplace,  
and helps improve the environment and reduce  
the cost



## What is the “Super Alkali Ion Water”?



### 1 It is safe because the element's 99.83% is water

- No surfactant or chemical substance used
- No BOD or COD used
- No colour, odor or irritants
- No chance of catching fire or exploding

### 2 High cleaning ability

- Breaks down fats and oils, creating an emulsion
- High permeability which spreads out
- Much less rinsing as it does not bubble

### 3 Strong sterilization filtration

- Sterilizes norovirus, legionella, E. Coli etc.
- The effect is elongated as it does not react with organic compounds

### 4 Strong rust prevention effect

- Prevents oxidization and metallic corrosion
- The effect of passivation continues the effect of rust prevention
- Prevents each processed water to turn ad. It also has an effect of deodorization

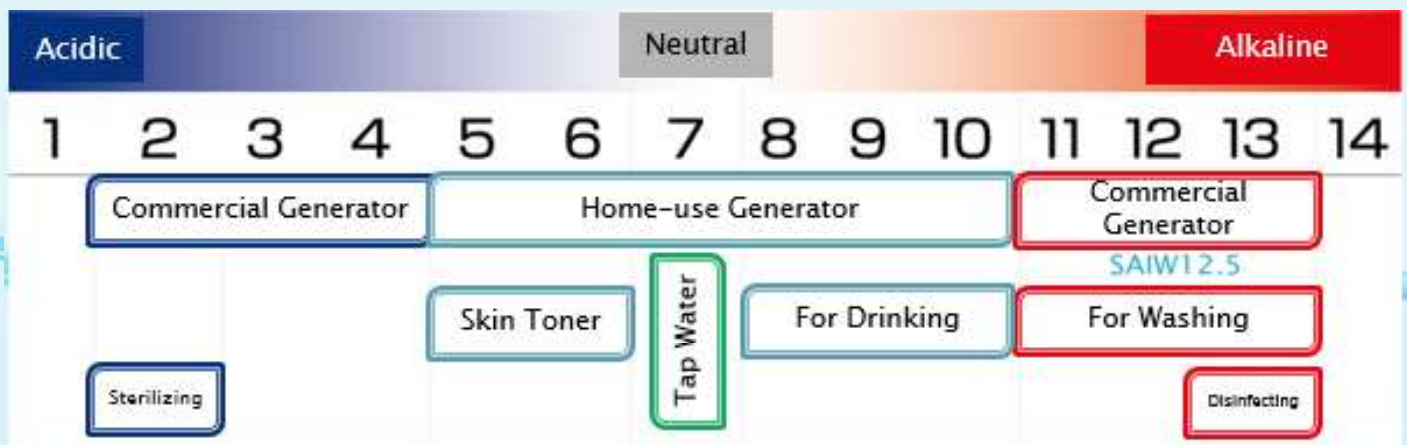
## Characteristics of the Super Alkali Ion Water (1)



Super Alkali Ion Water is a strong alkaline ion water.

pH is the power of hydrogen, with 1–6 being acidic, 7–8 being neutral and 9–14 being alkaline.

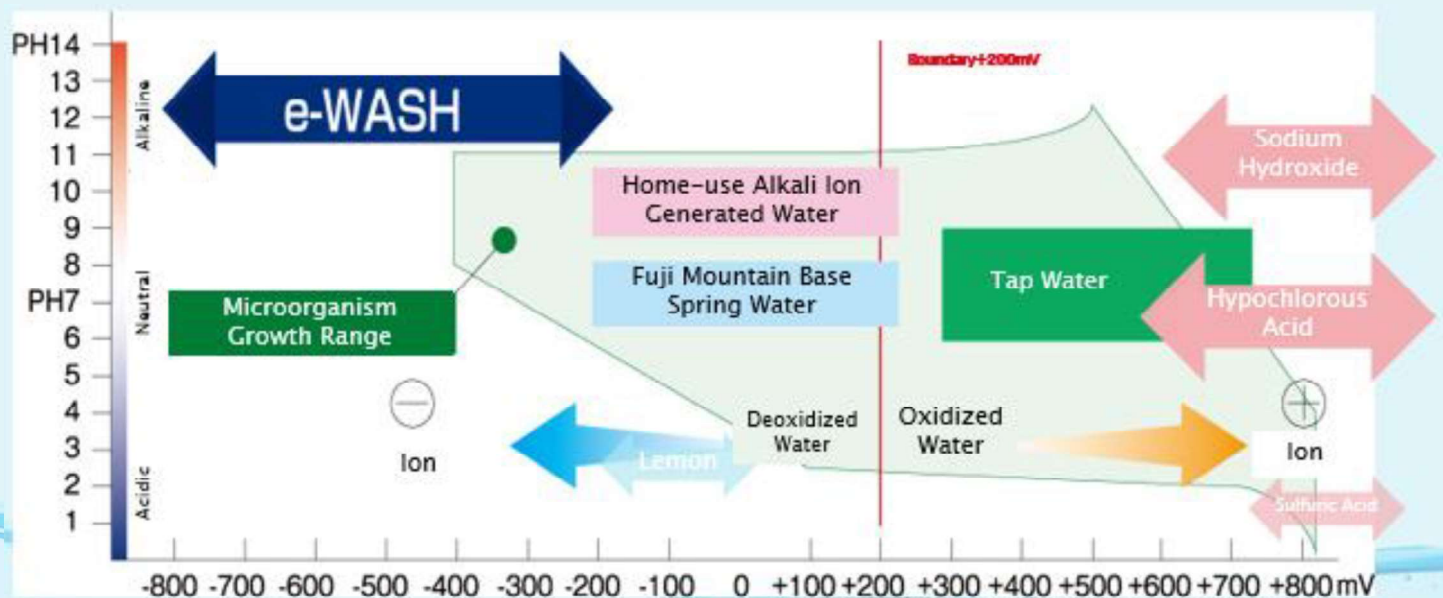
If it is a caustic soda or a strong alkaline chemical, there is a possibility of chemical burning if it is above pH 12.5. The similar pH Super Alkali Ion Water is the **first strong alkaline ion water that has been proven to be safely used against the human protein cell.**



## Characteristics of the Super Alkali Ion Water (2)



Power of hydrogen (pH) and oxidation–reduction potential (O.R.P) of Super Alkaline Ion Water



It kills (below the detection limit) Norovirus, legionella, E-Coli etc.

## Characteristics of the Super Alkali Ion Water (3)



The positives of Super Alkali Ion Water, according to the reduction potential

	Oxidizability	Reduction Power
Type	Caustic acid Hypochlorous acid Slightly Acidic Electrolyte Water/Ozone Water Alcohol Organic Solvent	Super Alkaline Ion Water
Metal	Causes corrosion/rust	Prevent rust
Food/Water	Accelerate degradation/rust	Prevents degradation/rust
Human Body	Accelerates aging	Antioxidant effect Health promotion
If it enters the eye	Follow the method of treatment according to poisonous substance	Same method of treatment as shampoo or soap

## Usage of Super Alkaline Ion Water



It has received high rating from companies that focus on safety and the environment

Automobile  
Manufacturer

Food Production  
Factories

Food Service Chain

Liquid Crystal  
Manufacturer



School Canteens

Hotels,  
Accommodations

Aquarium

Pets and Animal  
Hospitals

## Effects of Super Alkaline Ion Water



Decrease the amount of chemical used a creates a safe environment for workers



By implementing the Super Alkali Ion Water, it possible to gain chain reactions.



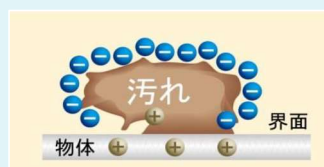


# The mechanism of the Super Alkali Ion Water



## ① Permeates the surface

The Super Alkali Ion Water with its high permeability quickly permeates the residue.



## ② Exfoliation and dispersion

When the positive electron becomes surrounded by the negative electron, the surface object turns into a negative electron and when negative electrons interact, the residue is exfoliated.



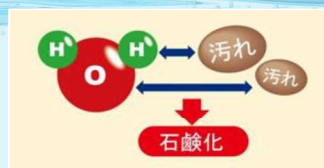
## ③ Emulsification and Separation

The residue becomes smaller when surrounded by negative ions, and will make the oil stain become emulsified.



## ④ Saponification

When the residue and the oil and fact content mix together, it forms something similar to liquid soap and the cleaning power continues even if the surface is dirty.

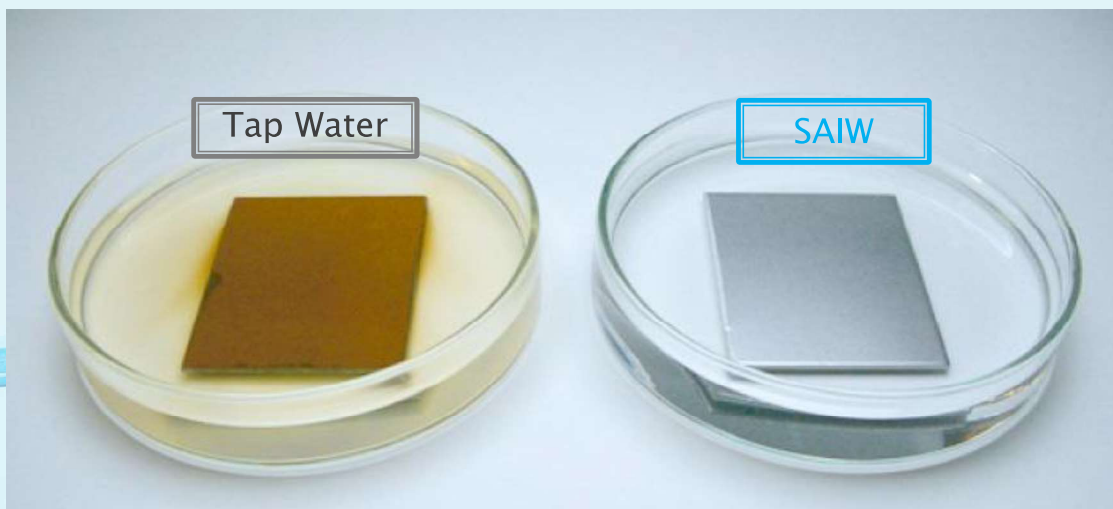




## Super Alkali Ion Water Rust Prevention



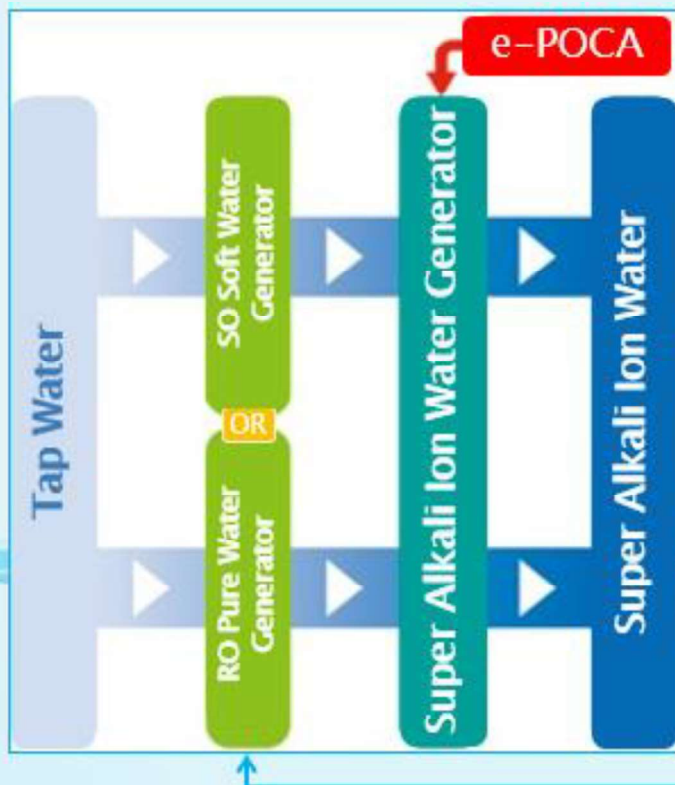
Super Alkali Ion Water does not have any acidic power and does not include any chlorine ions. Therefore it will not form any rusts. Due to the effect of passivation, prevention of rust can last until a few weeks after cleaning.



## “Super Alkali Ion Water” Production Flow



Removes any impurities and creates clean water.



### e-POCA

It is a high quality food additive grade of potassium carbonate (e-POCA). This helps to break down the electrolyte and creates the Super Alkali Ion Water.

With 1 bag (90g), it approximately makes 40L of Super Alkali Ion Water.

### Filter

It removes any impurities within the original water, alongside with any minerals such as chlorine and calcium. Select either the SO filter unit, which changes it to soft water, or the RO filter unit which turns it into pure water.

※If the original water is soft water, there is no need to filter it.

## “Super Alkaline Ion Water” Cleaning Test (1)



Washing a wrist watch band

→ It permeates in between small spaces, which removes and breaks down any dirt, saprophytes, or oils that have stuck to the metal



## “Super Alkaline Ion Water” Cleaning Test (2)

### Emulsion test

→ Oil can be emulsified without the use of any surface active agent





# Super Alkali Ion Water

## Implementation Examples (Industrial)



# “Super Alkali Ion Water (SAIW)”

## 5 major usages (Industrial)

5 major  
usages



### 1 Reduced the use of chemicals and detergent for water washers

- No need for alkali washing and prevention of rust
- Decrease in washing time and time

### 2 Prevention of rust of grinding lubricant

- Prevention of rust due to the alkalization of grinding lubricant
- Decrease in sludge

### 3 Usage in cooling water

- Suppresses oxidization of cold water, cleans pipes, suppresses bad odor, inhibits reproduction of legionella

Continues to 4, 5↓



The image is an example



Contd.

#### 4 Improving the environment for coating booths (water wash)

- Suppresses bad odor, easier to collect the sludge, cares about the environment and residents, increase safety for workers

(Removes the caustic soda or any form of chemicals)



#### 5 Others Washing and sterilizes the factory

- There's no additional washing, and
- Sterilization and deodorization of automobiles  
No bubbling and no odor, with no need to double rinse
- Sterilizes and removes odor from helmets, worker clothes, shoes, gloves
- Cleans the toilet, office, office kitchen





# “Super Alkaline Ion Water(SAIW)”

## 3 major effects of implementing

3 major effects



### 1 Decrease cost

- Decrease the use of detergents and chemicals (Just swap to SAIW)
- Remove any burden in using the detergents and chemicals
- Decrease the cost (washing water, drainage, time)

### 2 Increased safety and better environment

- No physical burden for the workers
- Inhibit use of chemicals that burden the environment
- Decrease CO<sub>2</sub> production



The image is an example

### 3 Contributing to society

- Considerate towards the surrounding environment
- Decreased burden for rivers and sewage facilities

# “Super Alkali Ion Water” Implementation Examples

## Fuji Xerox Manufacturing



### Cleaning the photosensitive drum



The image is an example

Wash the exterior panel of the photocopier with SAIW

It removes alcohol and chemicals. It also increases the power of sterilization, sterile filtration and environmental performance

Delivered from: Fuji Xerox Manufacturing Co., Ltd. Takematsu Center  
Manufacturing Department Manufacturing Technology Group

## “Super Alkali Ion Water” Implementation Examples (Multi-function Printer) Company R



### Recycle washing OA equipment (photocopier)



The image is an example

Wash the exterior panel of the photocopier with SAIW

It removes alcohol and chemicals. It also increases the power of sterilization, sterile filtration and environmental performance

# “Super Alkali Ion Water” Implementation Examples (Multi-function printer manufacturer) Company S



The image is an example

Four UF-15 was delivered in each office (2006)

## “Super Alkali Ion Water” Implementation Examples (Glass) Chemical Company A



Washing the glass cloth for the printed circuit board



The image is an example

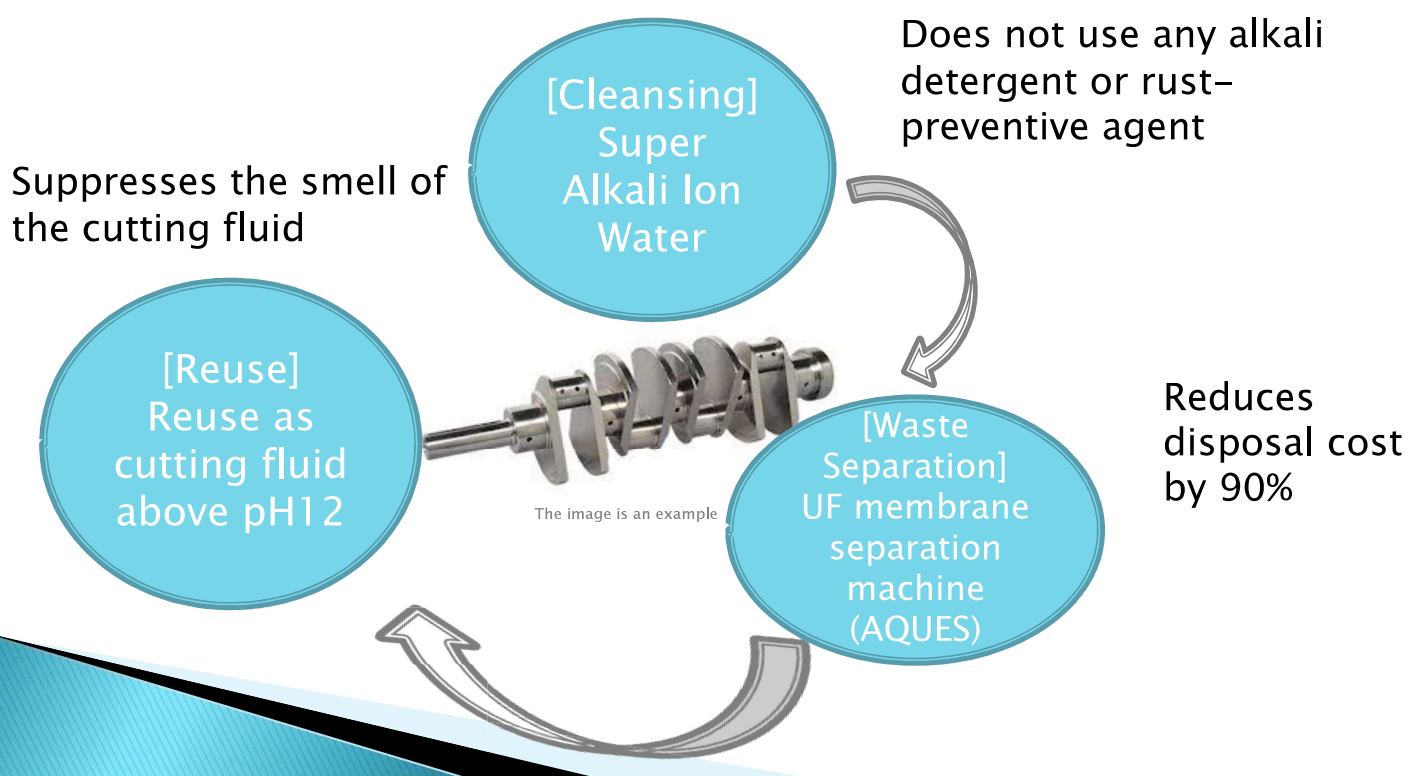
The glass fiber is used as electric insulator and a strengthening agent of the printed wiring board such as the smartphone.

**It reduces the amount of chemicals. It also increases the power of sterilization and environmental performance**

# “Super Alkali Ion Water” Implementation Examples (Automobile Manufacturer) Automobile T

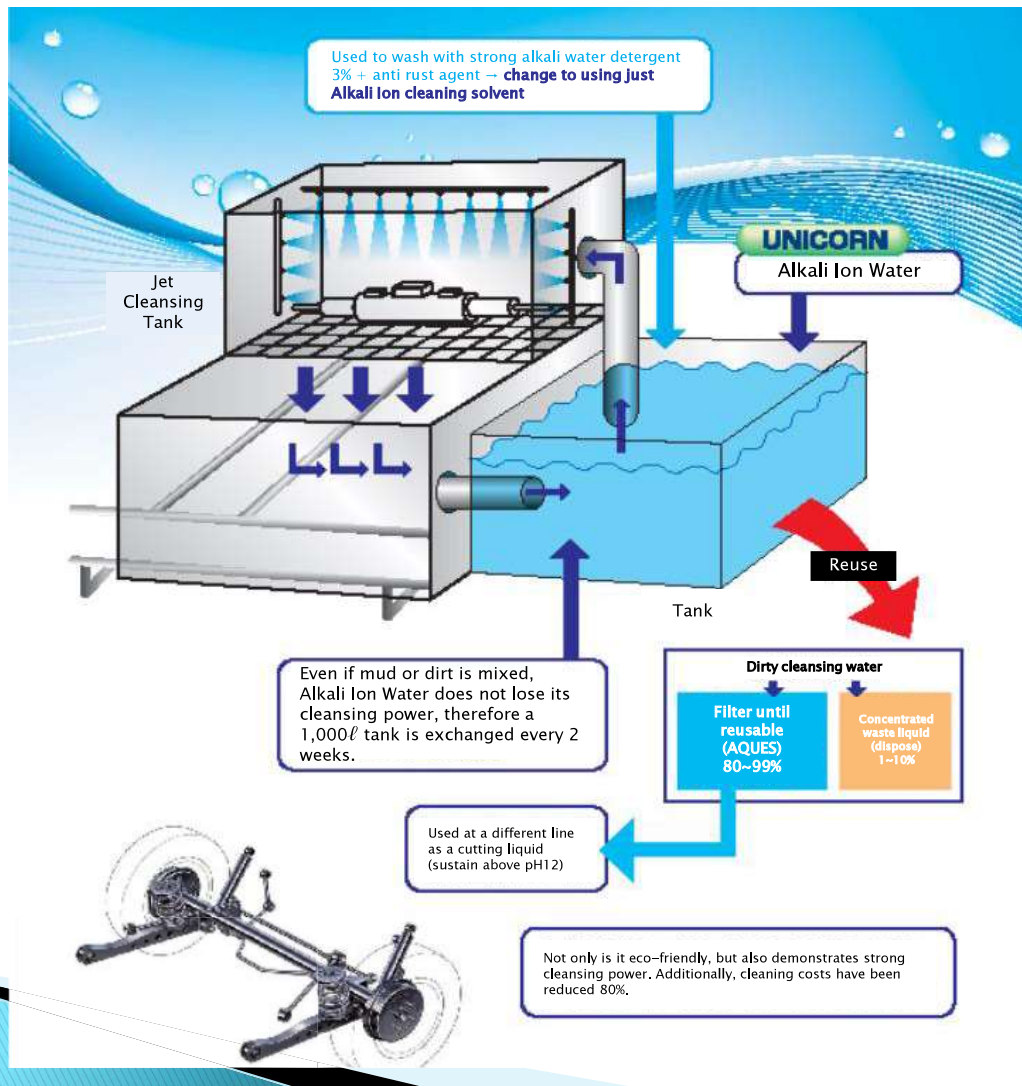


Using the Super Alkali Ion Water and liquid waste recycling system, one of the world's top class eco-friendly cleansing system can be implemented.





Contd.





## “Super Alkali Ion Water” Implementation Examples (Industry) Special Metal D



It uses the Super Alkali Ion Water . It has created an environmentally friendly washing method, without using any bubbling detergent and rust preventive agent. Completely removed any chemicals that are related with washing by removing oil, such as the caustic soda. Decreased a significant amount for washing, the amount of amount of drainage and time. It has contributed to an increase of quality and a decrease in cost of washing.



The image is an example



## “Super Alkali Ion Water” Implementation Examples (Construction machine manufacturer) Industry N



Super Alkali Ion Water was used to remove excess oil before the coating process and was used in the manufacturing of construction machines.

It removed the danger and risk of paint thinner.



The image is an example



## “Super Alkali Ion Water” Implementation Examples (Automobile Manufacturer) Automobile H



Used to remove the oil before the coating process, and was used in manufacturing trucks.

Substituted IPA with Super Alkali Ion Water.

Increased safety and environment.

Decreased proportion defective.



The image is an example



# “Super Alkali Ion Water”

## Implementation Example

UB-113  
pH13.1 Generator



Implemented the pH13.1 Generator for cutting and removing oil

It has been implemented in approximately 30 places at  
Komatsu

(Tochigi factory, Koyama factory, Koriyama factory etc.)

pH13.1 SAIW was implemented when the cutting oil was changed to a water-soluble substance

Reduce use of  
trichloroethylene

Increased  
separation of oil

Washing and  
removing oil  
Washing  
equipment  
(ultrasound)  
Washing tools

Coating booth  
Prevents rotting  
Sludge  
productivity

Cleaning  
Machine and  
floor cleaning  
Decreased use  
of chemicals  
Shortened time

# “Super Alkali Ion Water”

Implementation Example

UB-113  
pH13.1 Generator



Implemented the pH13.1 Generator for removing adhesive agents

Implemented in Nitto Denko  
(Increased the banned area to bring organic solvents)

Implemented the pH13.1 SAIW for washing cutlery and adhesive agent production caldron

Major Improvement in Safety

Decreased use in ethyl acetate and toluene by 70%

Washing and removing oil  
Washing equipment  
Washing tools

Used in cleaning  
Cleaning the machine  
Floor cleaning  
Decreased use of chemicals  
Shortened time



# “Super Alkali Ion Water”

(Examples of usage in washing)

## Component Washing

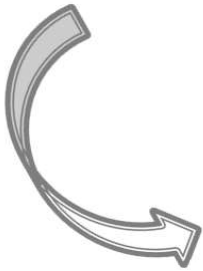
### Problems

Not enough washing, residue of the detergent, lower quality  
Health hazard if the warmed detergent is inhaled

- Detergent start rotting
- Cost of the detergent



The image is an example



**SAIW will solve this!**

Since the environment will become strong alkaline, the detergent will not rot.

Even if the warmed detergent is inhaled, there will be effect towards the workers.

Decrease the amount of washing and the amount of water  
No residue of the detergent and will decrease the problem of not enough washing.

Consequently, contributes to a decrease in cost.



# “Super Alkali Ion Water”

(Examples of usage in cutting)

## Cutting liquid of metallic parts

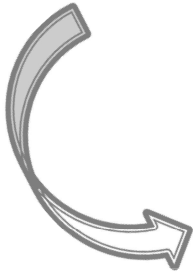
### Problems

Due to the water soluble cutting liquid oxidizing, it causes the anaerobic bacteria to reproduce

- The bad odor is at its peak from the start of Spring to Summer
- Preventing the cutting liquid to rot, extending its usage is something to work on



The image is an example



**SAIW will solve this!**

Mix the diluted water with SAIW and set the pH to 11.

By preventing the oxidization, it can suppress the reproduction of bacteria and the rotting smell.

Moreover, it will prevent the rotting of processed metals.

At the same time, it also increases the washing effectiveness.





## “Super Alkali Ion Water”

(Examples of usage in cooling down water)

Cooling  
Water

(Metal mold casting, aluminum die cast, resin molding, injection, air-conditioning etc.)

### Problems

The quality of molding decreases when cooling and decreases the yield.

The inside of the pipes will become corrode, form sediments and rot when cooling due to oxidization  
The cooling effect decreases due to the rotten smell.

The image is an example



SAIW will solve this!

It suppresses rotting and rusting of the pipe. The cooling water is able to reach into more areas and the cooling effect increases.

It improves the quality of molding.

# “Super Alkali Ion Water”



(Examples of usage in a coating booth)

Coating  
booth

(Water wash booth)

## Problems

The innards of the water wash booth rotting due to oxidization  
Anaerobic bacteria reproducing  
Bad odor to the surrounding environment  
Health hazards towards workers



The image is an example



**SAIW will solve this!**

Mix the SAIW with the water wash booth, and keep an alkaline pH of 10. This will suppress the oxidization of the booth and prevent from any anaerobic bacteria to form

It stops the rotten smell, and increases the amount of yield for the sludge.

# “Super Alkali Ion Water” Other Uses (Industrial)



## Automobile parts

### Washing the pressed processed parts



The residual oil from press processing, removing metal powder, interlock with the transfer press, complete removal of the residual oil, increased washing accuracy

Suppresses the rotten smell

Decreased industrial waste



## Precision Instrument Parts

Removal of polishing liquid and metal powder after honing and grinding



Increases the washing ability and stops rusting

Suppresses the rotten smell of the detergent

The image is an example



## “Super Alkali Ion Water” Other Uses (Industrial)



### Airplane Parts

Washing the cut processed



Removal of the metal contamination and the coolants of the cutting parts

The cutting oil has no longer re-bonded,  
and the rust prevention process has decreased  
It can now reheat the detergent,  
thus it dries better.



### Optical Instrument

Washing the glass parts



Removal of glass powder after processing the glass with cutting liquid

Decreased the amount of pure water and washing time

The image is an example



## “Super Alkali Ion Water” is 99.9% water Examples of uses in metal processing factories

