

# “Water Dissociater” using Amagi Pumice

SAWAMOTO Corporation (Kanazawa, Ishikawa)

## ◆ Outline

“Water Dissociater ”has Amagi Pumice; which is a porous natural ceramic flowed out from Mt. Amagi, in it.

It changes normal water to dissociated water. The dissociated water has the power to scale boilers, pipes, cooling towers and so on.

The equipment is used to improving cutting oil, drying of wood and foodstuff such as noodles, etc.

## ◆ Advantages

1. The dissociated water which has gotten through Amagi Pumice in Water Dissociater lowers the surface tension of it. In consequence, electric charge of water molecule speeds up.
2. **The dissociated water can penetrate material object such as scales, because oscillations of the dissociated water molecule speeds up.** It works in washing, cooling, scaling, and so on.
3. It is easy to maintain Water Dissociater. It doesn't need for replacement or washing of Amagi Pumice in it.
4. It can improve cutting-oil's quality for machining of metals. It enhances cooling, penetrating and lubricating of cutting-oil. It also enhances accuracy and productivity of components of machine tools. It makes cutting tools long-lived, and it reduce wastes such as grinded dust.
5. It can use for drying process of woods and foodstuff. For example, dissociated water penetrates at the core of wood products (more than 12cm cubes), speeds up drying them. Heating steam of dissociated water penetrates at the core of wood products (less than 12cm cubes), speeds up drying them because they dry from the core. It reduces boiler fuel and prevent cracks and warp of woods by the use of the equipment. The yield rate increases.

Water Dissociater



Use as boiler water to remove scale and not to use boiler compounds

## ◆ Users



(1) **A Dyeing Factory in Fukui**  
To scale the boiler they have.  
To reduce use of boiler compounds.



(2) **Machine tools processing plant in Ishikawa**  
To improve the cutting-oil they use.



(3) **Dyeing factory in Korea**  
To scale the boiler they have.

## ◆ Results from the use

### (1) Scaling boilers

- It reduces the cost of gas fuel by 6 to 8 percent.
- It reduces the cost of boiler compounds by 100 percent.

### (2) Improving cutting-oil's quality

- It reduces wastes such as grinded dust by 40 to 70 percent.
- It reduces the number of dressing and machine maintenance .
- The cutting tools can keep its quality better, thus it can cut twice to five times as many as components of machine tools.

### (3) Scaling pipes

- It reduces the cost of gas fuel by 6 to 8 percent.

## ◆ Technical Development

- We have collaborated on the improved cutting-oil with Gunma National **College of Technology**. We present our research results of it at the academic conference of the Japan Society of Mechanical Engineers on November 27th in 2011.
- We have collaborated on the improved water (analyzing and property) with Kanazawa University for three years.
- Our improving cutting-oil equipment is certified as a new tie-up business by our country in October in 2012.

## ◆ Business Development

We **mainly** expand this business to the factories as dye works to scale boilers and pipes. We have got assistance from our country in the field of the metal cutting work. We have also compiled empirical data of the work. We develop sales in Korea now.

### Corporate Profile

Chief Executive Officer: Satohiro Sawamoto

**Description of Business:** Sewage and Wastewater Treatment  
Water Dissociation

Major **Products:** Fresh water generator  
Reforming cutting-oil equipment

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