

### What is CAMZ?

Arsenic adsorbent “CAMZ” is a product jointly developed with Chubu electric Power Inc.. By combining “Circulash(\*)” with low crystalline iron complex, the adsorbing ability is highly demonstrated not only for the arsenic but for heavy metals in water.

(\*) What is [Circulash]?

Circulash is made from a coal ash generated by the thermal power plant. On the surface of the coal ash, crystal of zeolite is extracted.

It has innumerable hole like sponge on the surface and they have the function to adsorb various materials and of cation exchange.



### Feature of CAMZ

**1 High efficiency of arsenic adsorption.**  
Because the arsenic adsorption power is strong, this can suppress arsenic below the effluent standard. Moreover, because the adsorption ability is large, this is long the effect, and has the cost advantage.

**2 Effective for combined polluted water.**  
This is effective in heavy metals other than arsenic. It is possible to correspond to the combined pollution water.

**3 Needles of preprocess and post process.**  
The preprocessing of the pH adjustment etc. is not necessary at all. Moreover, sludge is not generated either.

**4 Advanced process is realized.**  
If existing arsenic removal equipment such as the coagulation process is used together, the advanced treatment of heavily polluted water can be done more efficiently.

**5 Low negative environmental impact.**  
This is composed of a harmless element, and there are neither pH change nor pollution with the poisonous substance.

**6 Easy exchange from an existing product.**  
Because this is a particulate product of about 0.6mm in the mean particle size, the exchange from an existing product can be facilitated.

### Use of CAMZ

We have 2 types of CAMZ as mentioned below.

#### • CAMZ for drinking water

Example of usage : Arsenic processing of underwater

Concentration of arsenic for processing : Up to around 0.1mg/L

#### • CAMZ for drain water

Example of usage : Processing of arsenic contained in drain from hot spring, mine or factory.

Concentration of arsenic for processing : Up to around 0.5mg/L

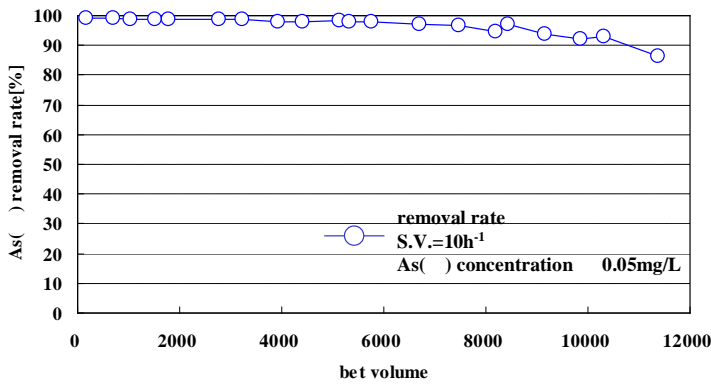


Example of filtration method processing that uses CAMZ

If this product is used together with the flocculation method when the high concentration arsenic polluted water of 0.5mg or more is processed, efficient arsenic processing becomes possible.

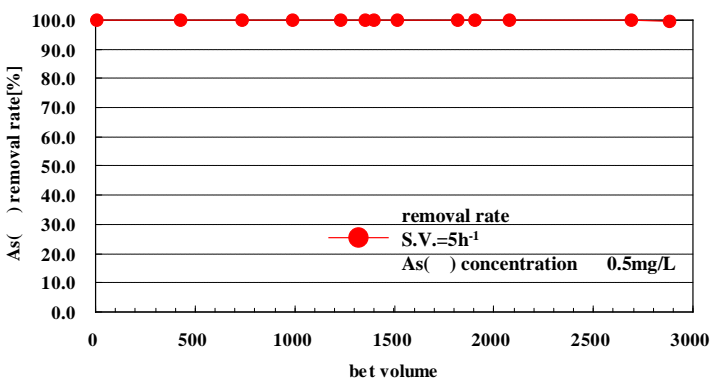
# Basic performance of CAMZ

CAMZ for drinking water



~ arsenic removal examination ~

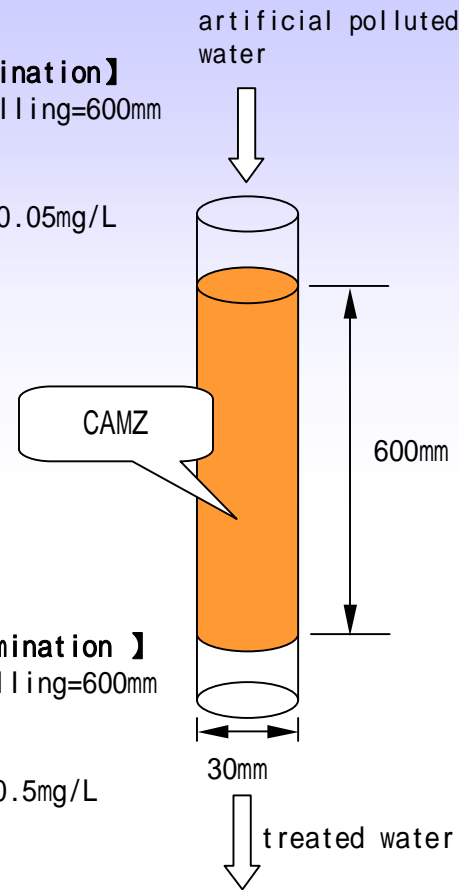
CAMZ for waste water



~ arsenic removal examination ~

## 【Arsenic removal examination】

height of absorbent filling=600mm  
 column diameter=30mm  
 space velocity=10h<sup>-1</sup>  
 As(III) concentration 0.05mg/L  
 pH=7.1



~ image of column device ~

## 【 Arsenic removal examination 】

height of absorbent filling=600mm  
 column diameter=30mm  
 space velocity=5h<sup>-1</sup>  
 As(III) concentration 0.5mg/L  
 pH=7.1

bed volume=Q/V

Q: volume of treated water (mL/h)

V: volume of CAMZ (mL)

The As(III) concentration is measured by using the atomic absorption photometry.

This is a very safe product, and a harmful element is not contained.

Particle size can be changed. (0.5-2.0mm)

The mean particle size of this product is about 0.6mm. This is shape that is appropriate for the pass method. Because the adsorption layer on the surface unites strongly with the core body, the amount of the sludge generation when reversely washing it can be suppressed.

~ CAMZ ~

The surface area of an artificial zeolite is very wide. So by combining artificial zeolite with low crystalline iron complex, the absorbing ability is highly demonstrated for combined Pollution water.

element	content(wt%)	element	content(wt%)
SiO <sub>2</sub>	78.5	K <sub>2</sub> O	1.4
Al <sub>2</sub> O <sub>3</sub>	9.0	CaO	0.8
Fe <sub>2</sub> O <sub>3</sub>	3.0	TiO <sub>2</sub>	0.2
Na <sub>2</sub> O	2.3	SO <sub>3</sub>	4.4

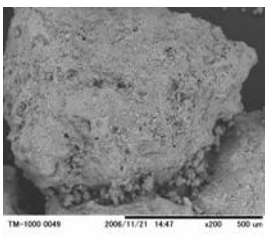
particle diameter	true specific gravity	apparent specific gravity
0.6mm	2.59	1.1 ~ 1.3g/mL

~ Element and physical properties of CAMZ ~



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~ electron microscope image ~