

PSI (Poly Silicate Iron)

Coagulant materials for water treatment

1. Strong coagulation power

2. Environmentally friendly (soil generated by PSI can be used for agricultural use)

3. Safe for living creature and human

Poly Silicate Iron (PSI) is the coagulant for water treatment. When compared with general coagulant PAC (Poly Aluminium Chloride), it is the safe coagulant for earth, plant, animal and human health since PSI consists of safe abundant element, Fe (Iron) and Si (Silicon), and do not contain Al (Aluminium). PSI can be recycled back to agricultural soil owing to its environmentally friendly nature and therefore, PSI is the new solution for water treatment industry.

In a recent world, the quantity of water which is contaminated with algae and toxic soluble organic substances increases because of human population burst.

Therefore, PAC or aluminium sulfide as aluminium based general coagulant can not fulfill the requirement of growing demand situation.

Aluminium based coagulant has the problematic issue due to its influence to environment and human health. When spread on soil, phosphate depletion could occur and that will be a problem. PSI coagulant consists of iron and silica and is the very environmentally friendly and safe coagulant or water treatment. Coagulation force is very strong compared with PAC and even algae and organic substances can be eliminated

in which PAC has the difficulty coagulating. Furthermore, PSI functions very well even at low temperature in which PAC is inactive.

FUJI PIGMENT CO.,LTD

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The Features

1. Strong coagulation effect under low temperature and low impurity conditions.

Owing to nature of iron and inorganic polymer (polymerized silica), strong coagulation effect can be expected even at low temperature, low impurity conditions in which general aluminium based coagulant (PAC) had only a weak effect.

2. Filtration time can be extended

Compared to PAC, increase speed of head loss can be lowered effectively. One can extend 10-20 % of filtration time period. Moreover, you can obtain clean filtrated water without biasing more force to filtration layer.

3. The amount of sludge can be decreased

Specific effect of iron and inorganic polymer enables us to provide strong sludge compression and dehydration, by PSI. Therefore, the water content in the sludge can be lowered which results in decreasing the sludge quantity. Eventually, disposal cost of sludge can be saved.

4. Precursor substance materials of “trihalomethane” can be effectively removed

Organic color chemicals as the precursor substance materials of trihalomethane can be effectively removed by strong coagulation effect of PSI.

5. Soil generated by PSI water treatment can be used to agricultural soil.

This is the most important feature of PSI. The soil generated by PSI water treatment contains rich phosphorus which is essential nutrition for plant growth and therefore, can be used as agricultural soil. PSI is the very environmentally friendly coagulant compared to aluminium based coagulant such as PAC.

6. Environmentally friendly and safe for human and live animal health

PSI is composed of iron and silica and very safe. Whereas aluminium based coagulant PAC remains the problem of influencing the central nerve system disease because of residual aluminium.

7. The weak-point of PSI which is gelation during storage, is suppressed with our technology

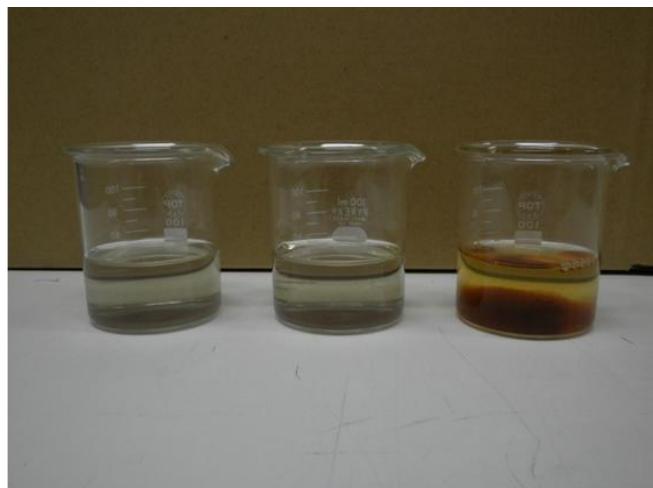
PSI tends to cause gelation during long term storage in a container. However, we have succeeded to suppress gelation problem with our technology.

Si / Fe	0.11 - 0.25
Fe (wt %)	5.0 - 6.0
pH	2 - 3.5
Specific gravity	1.05 - 1.15
Viscosity (mPa·s)	10 以下
Average molecular weight	500000
appearance	Brownish yellow liquid

Basic properties of PSI

(Above numbers could be modified upon customer's request)

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Waste water PAC PSI

Waste water from the chemical company factoryin Japan, treated with same amount of PAC (poly Aluminium Chrolide)and PSI(poly Silicate Iron). As one can see, only PSI shows sedimentation whereas PAC was too little to be effective for coagulation.



Waste water PAC PSI

River water from “Ina River”locates at Hyogo prefecturein Japan, treated with PSI(poly Silicate Iron). As one can see, PSI is very effective for River water.

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