BIOFOULING

Biofouling Monitor

On-Line Biofilm Monitoring System



Biofilm and biofouling inside piping and other components are a serious problem in many industries. To effectively control this problem, the highly sensitive and reliable monitor is required.

By monitoring the biofilm condition, the optimization and timing of biocide (chlorination) dosage can be achieved.

Problems Related to Biofilm and Fouling

- Only 20 microns thick biofilm causes a 30% decrease in thermal efficiency. This is more than 4 times that by calcium carbonate scale.
- Biofilm paves the way to the settlement of large organisms (macro-fouling). This causes the restrictions of water flow, thus increasing energy consumption.
- Biofilm causes microbiologically influenced corrosion (MIC), seriously damaging the pipes and other metallic components. On the other hand, the higher concentration of chlorine in water causes more corrosion.



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<u>Stage 1: (In a few hours)</u> Initial Biofilm Formation

Stage 2: (<u>In a few days)</u> Complex Community Formation

Stage 3: (*In a few weeks*) Attachment of larger fouling

Features

- ✓ The condition of biofilm development can be detected in various locations by real-time monitoring.
- ✓ A proper amount of chlorine injection can be achieved based on the biocide performance. It also automated with the chlorine injection system only when it requires.
- ✓ It can avoid the over-dosage of chlorine which is environmentally hazardous and toxic to livings.
- \checkmark It can be evaluated the effectiveness of any type of anti-fouling products and systems.

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