

ION ScaleBuster helps prevent Bacteria, Algae and Slime

Bacteria, Algae and Slime

The **ION ScaleBuster**[®] combines several effects, which help to prevent the environment in which bacteria, algae and slime thrive. The most obvious way in which **ION ScaleBuster** (also known as **ISB**[™]) creates hygienic conditions is by removing hard water scale and corrosion from pipes, membranes and heating surfaces. It is a well-known fact that scale provides an excellent breeding habitat for bacteria and the creation of biofilms. Clean smooth surfaces prevent habitats from being established in the water systems.

The two effects outlined below are little known, but unique to the patented design of the **ScaleBuster**.

The first effect results from the use of dielectric material (PTFE or Teflon[®]) in specially designed passages and microjet chambers create capacitive effects due to the generation of static charge on the boundary layer of the PTFE. These very large surface areas of PTFE have the effect of neutralizing charged colloidal particles, that until that point are kept in suspension as extremely small particles because they carry a charge. By neutralising these charges, they come out of suspension and flocculate to form larger particles.

The second effect is that the presence of a larger surface area of zinc anode causes the release of minute amounts of zinc together with oxides of zinc formed at the cathode (in this case metal pipes and vessels). These also act as coagulants as well as acting as nuclei to initiate the formation of large particles.

The creation of floc has two key benefits that contribute to preventing the growth of bacteria, firstly the floc absorbs nutrients within the water that are vital for bacteria to thrive and multiply and secondly by forming larger particles - filtration can be used to remove the particles from the water altogether.

ION ScaleBuster (ISB) has many applications including:

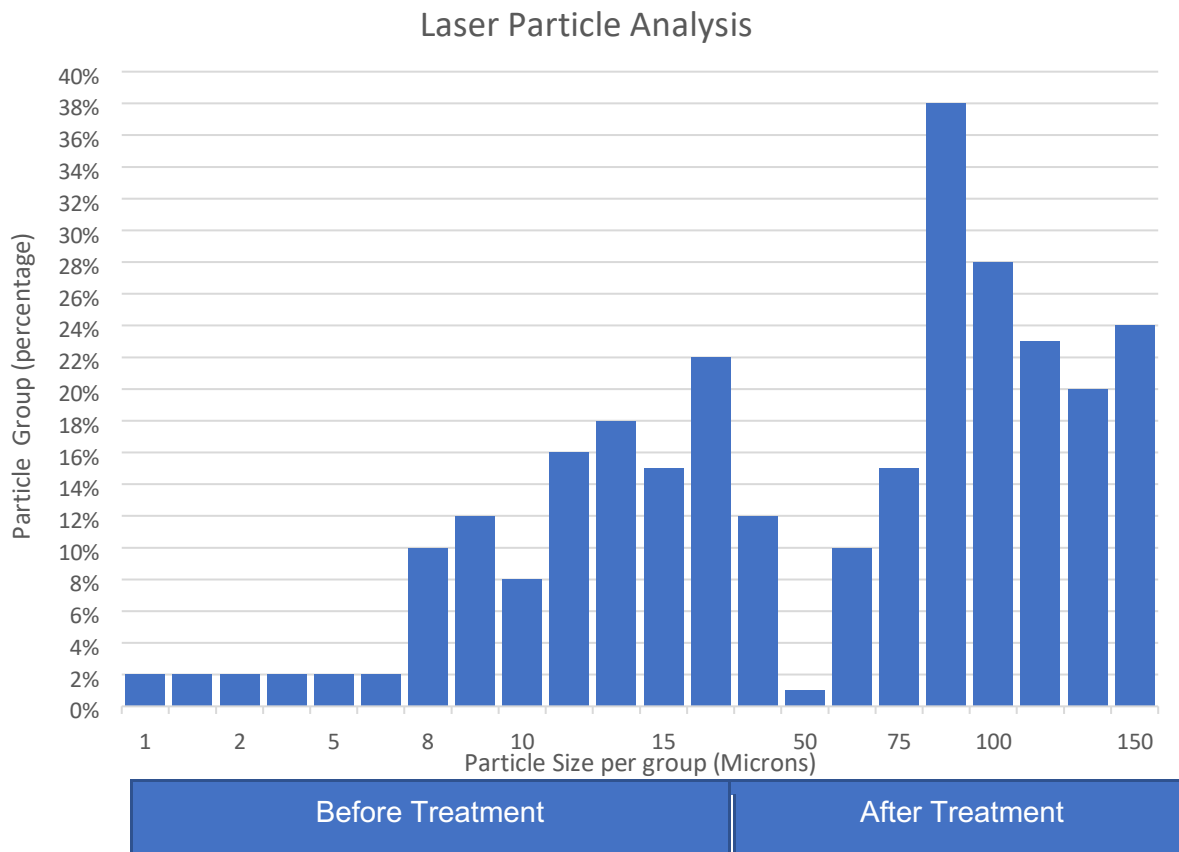
- Cooling Towers (open and closed circuits)
- Central heating systems and chiller units
- Membrane Water Systems
- Hot/cold water systems
- Protection of production processes.

The **ISB** can also be used to pre-treat irrigation water in ponds and reservoirs to avoid contamination by algae and slime where nutrients are needed to propagate. The treated water also shows better ground penetration (the water with reduced "surface tension" was able to penetrate the soil easier, decompact it and leech salts away from the roots).

ION ScaleBuster improves filtration

ION ScaleBuster (ISB) principle effect in hard water is to precipitate greatly enlarged particles within water stream, calcium carbonate and particles that coagulate with the organics creating larger particles. These larger particles can be extracted from the water flow by filtration system.

ISB help enhance the existing method of chemical dosing, as the water system is kept cleaner, therefore reducing the quantity of chemicals and extend regenerative system.



The **ION ScaleBuster** was tested by the GALAI CIS 100 computerized inspection system. The results supplied by GALAI demonstrated the formation of larger particles. Only the ION ScaleBuster with its combination with the dielectric PTFE turbulence chambers shows these positive results.