

Mode of Action and Health & Safety Summary

Tristel's biocidal action

Tristel's biocidal action is based on the creation of metastable chlorous acid in solution with the subsequent release of chlorine dioxide upon contact with the micro-organism cell surface. Chlorine dioxide is a highly effective biocide, but because the chemical structure at the surface of mammalian cells differs from that of micro-organisms it is non-toxic to human cells.

Tristel achieves the three basic criteria for chemical sterilisation

- absorption of the compound by the cell wall
- penetration of the compound into the cell protoplasm
- reaction with one or more of the cell's constituents

Tristel inhibits the metabolic enzymes and obstructs the metabolism of glutamic acid within the cell. Tristel acts as an oxidising agent upon the metabolism, speeding it up to the detriment of the cell. Tristel reacts directly with the basic molecular structure of the cell's proteins, thus killing the cell and inhibiting the development of the organism.



Safe to use

Tristel is non-hazardous and non-sensitising. Toxicology studies conducted for the United States Food and Drug Administration have shown that there are no reactions or contraindications when Tristel has been tested for eye irritation, skin irritation, skin sensitisation and acute oral toxicity.

Additionally, 48 hour human patch testing for primary irritation and the Magnusson-Kligman test have been conducted in the United Kingdom and demonstrated that Tristel is not a skin irritant, whereas peracetic acid was proven to be.

Chlorine dioxide has an Occupational Exposure Standard

Long term 0.1 ppm
(8 hour time weighted average)

Short term 0.3 ppm
(15 min time weighted average)

Environmentally compatible

Tristel is completely biodegradable and can be disposed of to normal drainage. A spillage can be managed without special precautions.

Unlike other chlorinated compounds, such as "Superoxidised Water," Tristel does not produce free chlorine.

There is, therefore, no formation of toxic trihalomethanes or other chlorinated compounds that have harmful environmental effects.