

## Perfection Plus Protect+ Instrument Cleaning Sachets

### An alkaline cleaning solution for surgical and laboratory instruments

Perfection Plus Protect+ Instrument Cleaning Sachets are an active surface cleaner intended predominately for the cleaning of surgical and laboratory equipment. The surfactants it contains effectively break down and remove dried organic matter from surfaces, so that the subsequent disinfection and sterilisation processes will be effective.

To validate these claims, The Royal Institute of Public Health, an independent body that has operated a Product Certification service since the early 1900's, engaged the services of a UKAS accredited laboratory to conduct trials in order to validate and verify the fitness for purpose and the continuing stability of the product. The methodology for the testing is shown below.

#### Test #1 - Cleaning of Substrate

Samples of three different substrate materials (blood<sup>1</sup>, milk powder suspension<sup>2</sup> & wheat flower suspension<sup>2</sup>) were inoculated with a known concentration of the *E. coli* bacterium. These were then spread onto representative surfaces and allowed to dry. The samples were then soaked in a solution, 1 x 17.5g instrument cleaning sachet to 3 litres of water for 5 minutes. The samples were then gently rinsed and the concentration of the bacterium species enumerated.

<sup>1</sup> representative of the type of material encountered in a typical clinical environment,

<sup>2</sup> provide difficult substrates to remove when dried.

#### Results:

In each test a reduction of at least 99.9999% of the marker bacterium was achieved. This equates to a Logarithm 6 reduction, a Logarithm 5 (99.999%) reduction is seen as the gold standard for cleaning. In tests Perfection Plus Protect+ Instrument Cleaning Sachets exceeds this by a factor of 10.

#### Test #2 - Alternative Test for Protein Removal

A sample of blood was spread onto two representative surfaces and allowed to dry. The 1st sample was then placed into a solution, 1 x 17.5g instrument cleaning sachet to 3 litres of water and left for 5 minutes. After gentle rinsing, the surface was allowed to dry and the protein indicator Ninhydrin was used to indicate whether any protein residues remained. In contrast the 2<sup>nd</sup> sample was not soaked in a cleaning solution, it simply had some Ninhydrin added to it in order to demonstrate that the test method could detect gross blood contamination.

#### Results:

No colour change was detected when using Ninhydrin on the sample cleaned using the Perfection Plus Protect+ Instrument Cleaning Sachets. This therefore demonstrates that the blood (protein) was effectively removed from the cleaned sample. As expected, the sample not soaked in the cleaning solution gave a positive colour change once the Ninhydrin had been added.

#### Cleaning Efficacy:

Removal of the substrates was measured employing 3 different test methods; loss of substrate weight, a Ninhydrin test and the use of a measured Logarithm reduction of inoculated bacterial species. In the case of the latter, this was only used to evaluate the cleaning efficacy through the removal of the substrates inoculated with the *E. coli* bacterium. It was not an evaluation of the direct destruction of the bacteria, although some may have occurred. Any measure of destruction would require challenge testing.

#### Conclusions:

The test results confirm that Perfection Plus Protect+ Instrument Cleaning Sachets when mixed at the tested dilution provide an effective cleaning solution for the removal of organic matter, which if left may inhibit the effectiveness of the subsequent disinfection and sterilisation processes. This initial cleaning cycle is seen as an important role in the processing of medical devices prior to disinfection and sterilisation.



Alan Fowler  
Quality Assurance/Regulatory Affairs Manager  
06/March/2024

Rev A0