

## Food & Beverage Aseptic Packaging

CHEMetrics® self-filling reagent ampoules provide quality control managers in the aseptic food and beverage packaging industry with simple, accurate measurements of hydrogen peroxide.



Aseptic packaging materials must be sterilized before Ultra High Temperature (UHT) treated food or beverages are packed. This ensures that the packaged products will have a shelf life of over six months.

Packaging material and machinery may be sterilized with a hydrogen peroxide solution before the packing process. A solution of 30-35% (w/v) hydrogen peroxide is used, which must be reduced after final rinse-off to less than 0.5 ppm (w/v) according to FDA guidelines (21 CFR 178.1005).

One of the leading milk processing plants in North America has selected the CHEMetrics K-5543 Hydrogen Peroxide Vacu-vials® ampoules and the V-2000 Multi-Parameter Photometer to ensure compliance with this critical residual concentration limit in its high-speed production environment. The plant operates its several production lines in a 24/7 operation with three shifts per day, and performs the testing process every 30 minutes.

In evaluating available test methods, the plant required:

- Accuracy and repeatability at low concentration levels,
- Easy training of operating personnel,
- Rapid test results, and
- Low cost.

The CHEMetrics K-5543 Vacu-vials® test system met those requirements. The system employs Vacu-vials® reagent ampoules and the V-2000 photometer.

Each ampoule contains a precisely measured dose of ferric thiocyanate reagent. When the tapered tip



of the ampoule is snapped beneath the surface of a sample, the vacuum in the ampoule aspirates the correct volume of sample to mix with the color-forming reagent. Hydrogen peroxide oxidizes ferrous iron to the ferric state, resulting in the formation of a red thiocyanate complex which is read by the CHEMetrics V-2000 photometer. Test results are achieved within one minute.

Operator training is reduced by more than 50% compared to alternative hydrogen peroxide tests because of the intuitive operation of the V-2000 Photometer and the easy-to-use Vacu-vials ampoules. The CHEMetrics system virtually eliminates false positive results due to operator error. Plant management and quality control personnel have peace of mind knowing that the packaging process is uninterrupted, their products are safely packaged, and they are fully compliant with local and federal requirements and regulations.

### General Aseptic Packaging Applications

CHEMetrics self-filling ampoules have become the industry standard for disinfectant testing within the aseptic packaging industry. They are available with an instrumental or visual finish. They are available not only for hydrogen peroxide but also other disinfectants such as peracetic acid and ozone.

Packaging operators routinely monitor residuals using CHEMetrics self-filling ampoules on aseptic packaging lines that process:

- Fruit juices
- Fruit desserts
- Milk
- Wine
- Yogurt
- Pudding
- Vegetables
- other Extended Shelf-Life (ESP) products



Ask us about  
our full range  
of analytical  
products.

### Order Information

Catalog No.	Description	Range ppm (mg/L)*
K-5510	Hydrogen Peroxide (visual)	0-0.8 & 1-10
K-5510D	Hydrogen Peroxide (visual)	0-25 & 30-300
K-5543	Hydrogen Peroxide (instrumental)	0-6.00
K-7404	Ozone (visual)	0-0.60 & 0.6-3.0
K-7423	Ozone (instrumental)	0-5.00
K-7904	Peracetic Acid (visual)	0-1 & 1-5
K-7913	Peracetic Acid (instrumental)	0-5.00

\* Additional ranges available for each analyte

Additional Technical Data Sheets are available on our website



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