

Ensuring the microbiological safety of the filling line :

Solutions by Claranor and Loehrke at Brau Beviale 2011

Since 2004, the French company **Claranor** proposes dry and non chemical solutions for cap decontamination for sensitive beverage filling lines.

Using the technology of pulsed light, Claranor designs compact equipment to be integrated on new or existing lines, to prevent the development of moulds or bacteria due to a packaging contamination. The products concerned are flavoured waters, fruit based beverages, carbonated soft drinks and dairy drinkable products.

Nestlé Waters was the first important industrial actor to trust Claranor and invest into the technology on several plants worldwide; in 2011, Claranor has sold its 40st equipment and improved the performance of the technology to be able to comply with the constraints of extended shelf life production.

Claranor has established partnerships with local distributors and integrators to optimize the market coverage ; **Loehrke** is the exclusive distributor of Claranor equipment in Germany.



*Claranor equipment integrated by
Loehrke at Vilsa*

A recent project of the German company **Vilsa** has seen the installation of a cap sterilization unit on a Krones packaging line of flavoured water. This installation by Loehrke was part of a global project of cleaning maintenance system installation, including a permanent spraying around sensitive areas and an automated cleaning system, supplied by Loehrke themselves.

The aim of the cap decontamination unit was to avoid the mould development hazard. Trials realised at the Fraunhofer Institute (IVV) have shown a 4.3 log reduction on *Aspergillus niger* on a 28 mm Vilsa cap treated with pulsed light.

The installation was performed in May, and since then the customer has been able to successfully lengthen the duration of production cycles of the line, running at 18.000 bottles/hour.

The integration of several other pulsed light units is being discussed at the moment with Vilsa, for their other production lines.

Claranor will be present at the Brau Beviale fair taking place 9-11 November at Nuremberg, on Loehrke booth, 4-317

About Claranor – www.claranor.com

Founded in 2004, Claranor is now located in Avignon, south of France, with a team of 20 persons. Manufacturing of equipment and development of new applications are performed onsite, while the microbiological qualification of industrial applications is carried out by an independent laboratory. Claranor sells its packaging sterilization solutions worldwide, directly to industrial end-users, through local distributors, and through the partnership with complete line suppliers, integrators of Claranor technology.

About Loehrke - <http://www.loehrke.com>

With a 25-year record of service supplying cleaning and disinfection technologies to industry, LOEHRKE is Germany's market leader for on site cleaning equipment. The company knows the food and drink producing sector inside out and the hygiene issues they have to confront. Loehrke has been the exclusive distributor for Claranor's solutions in Germany since 2010.

About the technology of pulsed light

The technology of pulsed light is based on the bactericidal effect of intense flashes of white light generated by xenon lamps.

Energy is accumulated in a capacitor, and a high voltage signal sparks an « arc » in a xenon lamp. This arc sets off a flash of intense luminosity. The flash lasts a few microseconds.

The flash thus emitted covers the entire white light spectrum, but is particularly rich in UV rays.

The performance of the technology in destroying microorganisms on surfaces has been demonstrated. It is explained by :

- the effect of UV rays, which have a denaturation effect on the DNA of micro-organisms ;
- the high power of the flash (short time – high energy)

The power of one flash can be expressed as follows:

$$\text{Power} = \text{energy of the lamp} / \text{flash duration} = 300 \text{ J} / 0.3 \text{ ms} = 1 \text{ megawatt}$$

The technology's efficacy has been demonstrated on a wide range of microorganisms: bacteria (vegetative cells and spores), moulds, yeasts, viruses...

In view of the low energy levels needed to generate the flashes, pulsed light has been classified in the soft technologies category, along with high pressure and pulsed electric fields. Among these technologies, pulsed light stands out on account of its demonstrated efficacy in destroying thermoresistant spores.

Decontamination levels attained depend on the number and power of the flashes applied to a surface. They can vary from a single log reduction to total sterilization.

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