

Catallix, a New Food Safety Technology using immobilized bioactive proteins

Catallix[®] technology, perfected by TMI Europe in partnership with Biopole of Belgium and the ANVAR Innovation Institute in France, is a means of obtaining a continuous supply of pure, natural, clean water which has its own built-in biocidal properties.

Easily inserted into a wide range of food or beverage processing lines, where it 'activates' water to give it biocidal and bacteriostatic properties, Catallix[®] is a biological generator that is based on natural enzyme immobilization. The resulting flow of Active Water (Eau Activée[®]) has been shown in tests to be effective in killing and inhibiting staphylococcus; *E. Coli* (O157H7 included); *Salmonella*; *Listeria*; *Shigella*; *Pseudomonas*,.....

Essentially, the Catallix[®] system draws on an enzymatic reaction that occurs naturally in the mouth, the eyes and other parts of the human body to create a natural anti-bacterial agent.

Thanks to a new immobilization technology developed by the company, the enzymes can be used continuously in the Catallix[®] biogenerator to give a constant flow of activated water.

According to test results, the Active Water flow has been shown to remain active for about 10 hours and to be effective as a non-toxic alternative to chlorine, ozone and peracetic acid for killing bacteria in products.

"Active Water is crystal clear, like sterile water. It has no smell or taste and is totally recyclable. We have seen that it can actually improve not only the flavour of washed salad and vegetables because there is no chlorine deterioration in the finished product, but also the shelf life of the treated products."

Successful laboratory & industrial plant tests have already been carried out on the effectiveness of the Catallix Active Water in killing Salmonella in chicken pieces, by spraying them continuously with the water. "We have done tests on cleaning-in-place systems where we use Active Water in the last wash cycle, once the heavier dirt has been removed, to ensure that any residual microbiological contamination is removed".

Catallix[®] can produce Active Water at rates from 100 liters per hour up to 10,000 liters per hour but there is no limit to the volume of Active Water that can be created because more than one Catallix[®] biogenerator can be used at a time, and TMI can design and build biogenerators "tailor-made" to fulfill the exact need of their customers.

Active Water is totally harmless and any of the active ions biodegrade into an innocuous material.

It can offer Biocidal and/or bacteriostatic activity for a large range of applications (food treatment, rinsing bottles before filling, ...). Please, do not hesitate to contact us.

Catallix[®], For your Food Safety

www.catallix.com



food-MAC Network provided TMI Europe and Catallix[®] with:

- EU directives about technological auxiliaries
- authorized products and techniques in the targeted countries
- interested possible customers in several European countries
- advertised on the project site when the company received the innovation award for its integrating IPR in the company management.

www.food-mac.com

MAIN ADVANTAGES

Catallix® process is **100% natural**.

Catallix® can disinfect food products **without thermic treatment**, that is to say at various room temperatures.

It can offer Biocidal and/or Bacteriostatic activity for a large range of food product treatment (fruits, vegetables, poultry, cheese, etc.) and other application (rinsing bottles before filling, ...).

Food is simply washed or sprayed with Eau Activée® (Water with Biocidal properties).

Eau Activée® has No Smell

Catallix® totally **respects the organoleptic quality** of products

Catallix® secures food products and **increases their shelf life**

The Eau Activée® produced by Catallix® does not combine. It is totally **harmless** and any of the active ions biodegrade into an innocuous material. Therefore, no neo-formed compound may be created (e.g. organo-chlorinated compound).

Producing Eau Activée® is risk free for the staff working in the plant. It does not create bromides.

INNOVATIVE ASPECTS

The efficiency of the enzymatic system, a natural protection system of the human and animal organism, has been known since 1929. But TMI Europe's innovation is the immobilization technique: Whereas the enzyme is expensive when used directly on products, Catallix biogenerator immobilizes it in order to use it as a catalyser to produce Active Water, continuously and at a reasonable cost.

The enzyme is therefore never in contact with the treated product.

STAGE OF DEVELOPMENT

The technology has been tested on various food products (vegetables, fruits, cheese, meat, fish,...) and Catallix Biogenerators are fully developed and automated. References available.

INDUSTRIAL PROPERTY RIGHTS

The technology is patented worldwide (PCT) and "Catallix" and "Eau Activée" are registered trade marks.

TYPE OF COOPERATION SOUGHT

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| <input checked="" type="checkbox"/> Licence agreement | <input type="checkbox"/> Manufacturing agreement (Subcontracting & Co-contracting) |
| <input type="checkbox"/> Technical Co-operation | <input checked="" type="checkbox"/> Commercial Agreement with Technical Assistance |
| <input type="checkbox"/> Joint venture agreement | <input type="checkbox"/> R&D partner |

PARTNER SOUGHT

Mainly Food Industry

COMPANY MAIN ACTIVITIES

Biotechnology – Food Safety

General Information



Company Name : TMI Europe

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Year of foundation: 1998

Number of employees : 8

Turnover (M€): < 0,5