

# PHARMACOLOGY and COSMETIC



## MICROBIAL CONTAMINATION OF PHARMACEUTICALS and COSMETICS

Non-sterile pharmaceutical and cosmetic products may be contaminated with microorganisms. The contaminating microorganisms may cause spoilage of the product with loss of its properties and, if they are pathogenic, serious infections can arise.

Microbiological contamination of pharmaceutical products may originate from the raw materials and it will invariably be transferred to the product.

A lot of factors contribute to microbial load carried by a pharmaceutical and/or cosmetic preparation at every stage. These include: raw materials used, manufacturing processes or personnel, conditions of storage and packaging materials.

## A BASED-SCIENCE SOLUTION: OZONE TECHNOLOGY

PC Engineering solutions provide a safe and proven alternative for pharmaceutical and cosmetic industry.

The ozone, efficiently used to sanitize the raw materials and preparation and packaging areas, helps to maintain the high quality and microbiological safety of the raw materials and consequently of the final products.

## OPTIMUM SAFETY AND EFFICACY

The unique closed-loop concentration control and remote monitoring capabilities provide optimum safety and efficacy. The measurement sensors and on-board computer maintains ozone concentration at desired set-point. The solution includes fail-safe ambient air sensors and/or water sensors, which constantly ensure the safety of working area and the constant efficacy of the system.

The remote monitoring service constantly tracks system performance and provides detailed reports and automated alerts.

## KEY FACTS

### Reduce microflora contamination

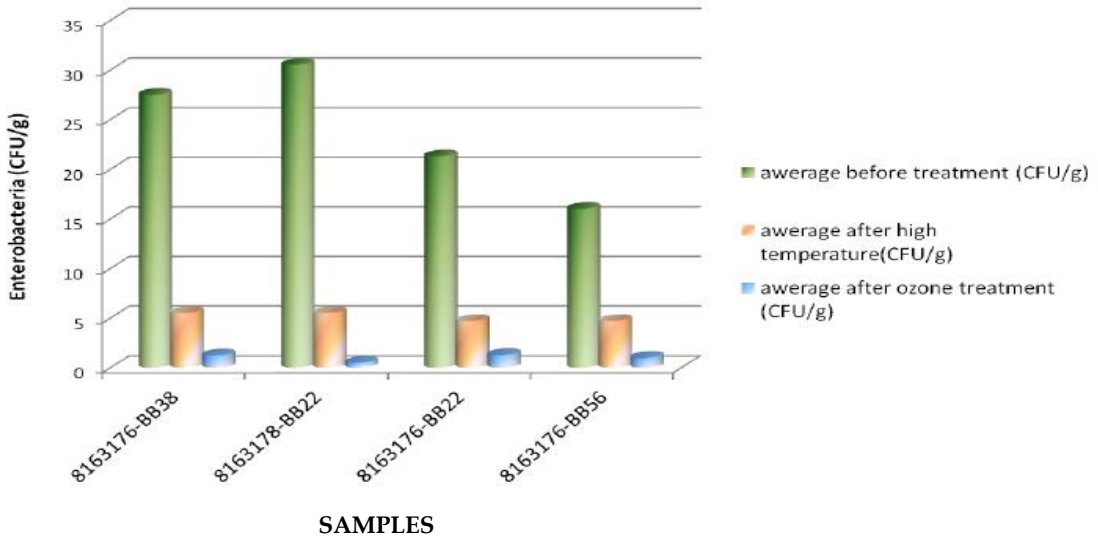
- It kills surface and airborne microorganisms, including bacteria, yeast, molds and spores
- It controls sporulation
- It increases the raw materials safety
- It prevents cross-contamination

### USDA and FDA approved



**Efficacy of ozone treatment on microbiological quality of raw materials used for pharmaceutical and cosmetic applications.**

Enterobacteria can be very resistant to high temperature treatments and dangerous for human health.



The only treatment with high temperature is not enough to ensure the death of the microorganisms. The combining treatment with high temperature and ozone fumigation is the best solution to completely eliminate these bacteria and other microorganisms, as a guarantee of the raw materials safety.

**Biocidal effect of ozone, with wide spectrum on microflora**

