



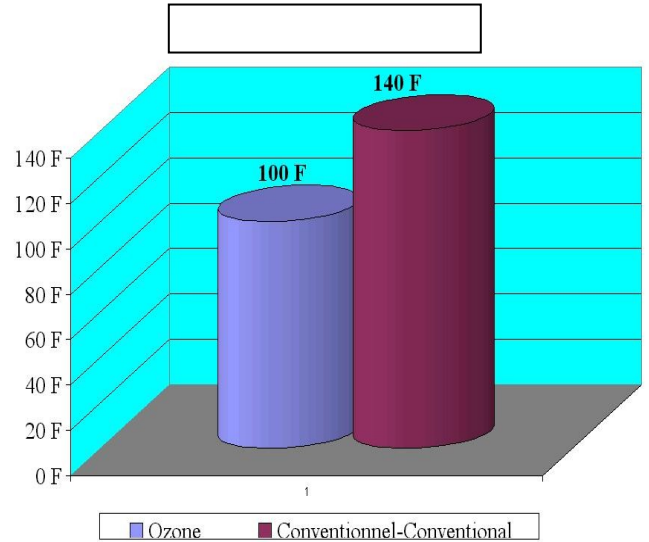
Tel: 450-378-6825 Fax: 450-777-0264



Average washing time with conventional detergents -  
Temps moyen de lavage avec les détergents conventionnels  
47 minutes



Average washing time with ozone laundering -  
Temps moyen de lavage à l'ozone  
24 minutes



## OZONE LAUNDERING

Ozone laundering means using water saturated with ozone, instead of using fresh water, throughout the wash cycle. Laundry disinfecting has been traditionally accomplished by bleaching with chlorine at high temperature along with agitation. This bleach is normally a slow reactant at cold temperatures, so hot water is used in conventional washers to enhance the oxidation reaction of chlorine bleach.

Ozone, which carries an electrical charge, does the disinfecting in the place of hot water. It works well in cold water and reacts very rapidly, dissolving soil on contact. **Hot water is unnecessary for most ozone laundry applications.** Being a strong oxidant, ozone **cleans without the use of detergent.** For heavily soiled loads, ozone is used in combination with small amounts of detergent and bleach. Because detergent is not used, **rinse cycles to remove detergent residues are unnecessary.** Without soap, linens and clothes do not compact as much and they release

# OZONE BENEFITS

## *A- For treating process water*

Through ozonation, soils are chemically altered into soil oxides that are easier to treat and process. Subsequently, using ozone as a wash chemical improves the economics and efficiency of the washing process. Laundries benefit in several major areas:

- **Reduced chemical expense.** Ozone substantially reduces the amount of wash chemicals required and makes some chemicals obsolete.
- **Wash time reduction.** This is achieved by shortening certain wash events and eliminating other events. Mechanical action and detergents are more effective in the presence of ozone, allowing for shorter break and suds events. Less residual chemicals are used in the formula permitting the elimination of some rinses.
- **Increased production.** A considerable increase in washroom throughput is made possible by reducing formula time.
- **Decreased electrical consumption.** Even though the ozone system operates on electrical power, the reduction in wash time yields substantial electrical savings.
- **Reduced water usage.** Significant water savings are realized through the removal of washing events.
- **Utility savings.** Lower wash temperatures and removal of some hot water events reduce water heating costs.
- **Decreased effluent concentrations.** Decreased use of residual wash chemicals, transformation of soils into an oxide form and increased levels of dissolved oxygen aid in reducing levels of pollution in waste water.
- **Increased textile life.** Less mechanical action, lower alkalinity and reduced wash temperatures improve textile life.
- **Superior sanitization capabilities.** Ozone has gained widespread use in purifying drinking water. It has replaced harsh chlorine treatments because its remarkable oxidizing power has demonstrated the ability to destroy bacteria up to 3,000 times faster than chlorine.
- **Improved deodorization.** Most odors are associated with molecules that have centers of high electron density. As ozone reacts with these molecules, oxide compounds and oxygen are produced and odor is eliminated.

**Reduced machine maintenance.** Reduced machine run time has a positive impact on maintenance.

## ***B- Water recycling***

**OZOMAX INC.** specialises in the engineering of ozone applications for textile and laundry industries. OZOMAX inc. ozone generators are low or high frequency, air cooled and based on the Corona discharge principle. The generators are made with components which are UL and/or CSA approved by workmanship in accordance with the Order of electrician of Quebec, Canada. All plastic enclosures are fire retardant and in accordance with the North American standards. Metal enclosures are NEMA 4 or NEMA 12.

**OZOMAX inc.** invests in an on-going research & development program in order to provide its customers with the most economical ozone applications. This enabled the development of a unique software to evaluate the ozone requirements under a variety of conditions (pH, temperature, pressure, etc)

The expertise of **Ozomax.inc** aims textile mills and commercial and institutional laundries such as those found in hospitals, hotels and corrections facilities.

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### **FACTS ON OZONE**

- **Disinfects 3000 times faster than chlorine**
- **Powerful biocidal: 99,5-99,7% killing rate of bacteria and viruses (150% more effective than chlorine)**
- **Eliminates odours**
- **Unlike chlorine, ozone does not generate toxic by-products**
- **Strongest oxidant on earth besides fluorine**
- **Chemical-free technology + complete degradation of organic waste ⇒ positive environmental impact**

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## **Cost savings for Typical Large Hotel**

- Chemical reduction by 40% = \$48,000.00/yr
- Energy cost reduction (hot water) = \$32,300.00/yr
- Energy cost reduction (hydro) = \$99,000.00/yr
- Linen savings (replacement) = \$57,000.00/yr

In addition to these savings, variable value savings will include:

- Identification of laundry room facility deficiencies
- Water usage & waste-water cost savings

*Facts based on 2.5 million lbs of laundry per year. That is 50 loads per day, weighing 135 lbs per load*

## Typical installations such as in big Hotels



Tunnel Washer

# Laundry Waste Water Recycling typical Installations

