

Ozone Technology

The value of Ozone

Ozone laundering allows cold water washing with significantly reduced water consumption, while guaranteeing bacteria and virus kill, significant energy savings as well as increased linen life. Ozone (O₃), sometimes called 'activated oxygen', contains three atoms of oxygen rather than the two atoms we normally breathe. The third oxygen atom of ozone makes it extremely reactive. This makes it the second most powerful disinfectant in the world. Ozone attacks most organic soils and kills bacteria 3200 times faster than chlorine bleach.

What can I save?

Proven Savings [#]	Water	Hot Water	Internal Heating	Sewerage	Cycle Time	Total Savings Per Year
Ozone technology	40%	90%	90%	40%	15%	
Cost savings [^]	\$1,342	\$6,012	\$4,945	\$1,074	\$**	\$13,373

[#] These savings have been proven by use of check meters based on standard wash cycles in washer extractors.

[^] Using average costs, based on a laundry currently using 2500 kL per year. Does not include savings from other related processes including drying and labour input.

^{**} Dependent on the current dryers and how a decrease in cycle time will affect the laundry staff times.

Ozone technology has been successfully used on the following:

Aged care sector

There are currently several hundred high and low level aged care facilities utilising an ozone system in their laundries

Hospitals

A number of public hospitals have installed ozone systems with great success

Hotels

A number of large 4 - 5 star hotel chains across Australia are currently utilising an ozone system in their laundries

Commercial laundries

Businesses with a production rate of >3 tonne per week have found the installation of an ozone system to be economically viable

Considerations

Ozone systems are generally not suitable for public access laundries due to wash cycle set up with limited water and energy savings. This means attractive payback periods are difficult to achieve.

Ozone systems are not suitable for top loader washing machines as controls do not allow modification to achieve water savings.

Australian standards have specific regulations in regard to disinfection of textiles and the appropriate temperatures and processes required. The use of cold water requires a validation of the laundering process to ensure effective disinfection.

Features to look for	Explanation
Fail safe shut off	Ensure your supplier has a fail safe device which will shut the machine down if ozone levels are not delivered at the exact dose required.
Direct injection	Ozone is directly injected into the water at the required level.
Proven track record	Review case studies from the supplier and speak to businesses using the product.

Common misconceptions & frequently asked questions

Is ozone laundering only good for lightly soiled items?

No

Ozone laundering is appropriate for heavily soiled and foul type healthcare laundry and water savings of at least 40% are currently being achieved. There are several hundred high care aged care facilities where linen is at it's most soiled with Ozone systems in operation.

Does an ozone system use more or less chemicals?

Neither

Chemical suppliers and ozone system suppliers have worked closely over the last few years to develop the right chemical balance and composition for cold water. Ozone is more effective with a different chemical composition to hot wash cycles with the dosage level remaining constant.

Do I need to consult my chemical supplier when converting to ozone?

Yes

Engaging your chemical supplier at the time of installation of ozone will ensure that doses are set in line with the ozone set system and wash cycles used. Too high a dosage of Alkali or detergent will cause yellowing of linen given reduced number of rinses. Too high bleach dose or the wrong type of bleach will fight with the ozone and the ozone affect will be limited. A good understanding of the chemical process together with a good relationship with your chemical supplier will ensure the ozone system operates at its optimum level.

Is ozone hazardous to laundry staff?

No

Ozone systems with direct injection feed the ozone directly into the wash. All ozone is depleted at the end of the cycle and is therefore safe for use and does not affect laundry worker's health. An environmental monitor will ensure that if any of the system develops a leak an alarm will be triggered.

Is ozone corrosive on the machine?

No

Advancement in ozone and machine technology have seen the development of corrosion resistant seals. No further concerns have been identified.

Does ozone discolour white linen?

No

Greying of linen is caused by redeposition of soiling finding it's way into the hollow fibres of cotton. In traditional laundering if the hot water temperature is not high enough (65 deg minimum), the bleach will not activate and greying will occur rapidly. Ozone activates the bleach much the same way that hot water does. If the ozone dose is too low then the linen will go grey in cold water. If the bleach pump is not dosing enough bleach then the same will occur. Ozone technology needs to be set in conjunction with chemical supply to ensure both compliment and deliver the correct balance to the system.