

# Know How Electrochemical Activation Works

Bio-cleaning systems for the cleaning industry.

Buyers guide





# A cleaning solution for a changing world

Over 200 million tonnes of toxic and environmentally harmful chemicals are produced each year in Europe alone (source: Eurostats, [www.ec.europa.eu](http://www.ec.europa.eu)). And at least 8m tonnes of plastic leak into our oceans each year. Only 5% of plastics (including chemical containers) are recycled effectively, while 40% end up in landfill and a third in fragile ecosystems, such as the world's oceans (source: World Eco Forum, [www.weforum.org](http://www.weforum.org)).

Rising public concern regarding the environment means the cleaning industry needs to demonstrate a real commitment to tackling these issues.

We've already experienced a green revolution of certain cleaning products and materials. Some, such as microfibre, have more than proved their worth while others have most certainly not. In fact, the word 'green' on a product label is often overrated and certainly overused.

## A tough problem

Of course, this isn't a reason for us all to stop trying to find innovative alternatives. So how can we replace the 80,000 known chemicals presently in common use within the worldwide cleaning industry and still keep our hospitals, care homes, schools, offices and homes safe and clean?

Cleaning products impact the environment and our well-being from their packaging, transportation and the amount of energy used to create them. Chemicals can pollute rivers and streams, and can take years to break down. What's more, they can cause health problems ranging from irritating cleaners' hands to more serious respiratory concerns such as work-related asthma and chronic obstructive pulmonary disease (COPD).

## A very simple solution

We believe we have an alternative to chemical cleaning. It's a multi-purpose disinfectant and cleaner that is scientifically proven to work, will cost businesses a fraction of the price, and doesn't cause any harmful health side effects.

Like the best ideas, it's incredibly simple. It's also environmentally friendly and cheaper than traditional chemical disinfectants and cleaning solutions. It all starts with clean water, a dash of salt and low voltage electricity.

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# ECA: A revolutionary product for the cleaning industry

Electrochemical activation (ECA) technology offers the most effective, money saving and environmentally friendly disinfectant and cleaning alternative to synthetic chemicals.

Its components of water and salt are naturally occurring and, when activated, the solution is non-toxic and non-hazardous to people and animals.

While this colourless liquid may look like clear water, it's powerful stuff. Stringent tests undertaken by EU accredited independent laboratories and university research departments have shown it is highly effective against all types of bacteria, viruses, cysts, protozoa, algae and spores, eliminating all forms of microorganisms in water supplies, on work surfaces, fabrics and materials. Even more impressive, the solution kills up to 99.999% of microorganisms, including pathogens, with a very fast contact time and virtually no regrowth.

## **How ECA works**

The activation process, which is a form of electrolysis, uses ordinary tap water containing dissolved salt (sodium chloride). A small electrical current is applied using a specialised electrolysis cell to produce a hypochlorous acid and sodium hypochlorite solution on demand. This makes a potent, naturally occurring disinfectant, cleaner and sanitiser that's safe, non-toxic, non-allergenic, environmentally friendly and low cost.

## **Where it's used**

Today, the adoption of ECA technology is mainstream in many industries. It's used for general disinfecting and cleaning tasks, disinfecting drinking water, combatting Legionella and other bacteria in water supplies, and it's even used on cut flowers and fresh foods such as salads and vegetables to prolong shelf life. Companies are now beginning to realise that they don't have to use toxic, environmentally damaging and expensive synthetic chemicals to disinfect and clean.

Simply using water, salt and a very small power input, these tasks can now be undertaken in an environmentally sensitive and sustainable way to help save costs as well as the planet.

Perhaps even more amazing, this cleaning game changer is also really easy to adopt. The solution is made on site, 24/7 if required. All you need is the correct size machine to suit your cleaning requirements, electricity, water and every day salt.

# The science bit

The process of passing a small electrical current through a specialised cell in a solution of tap water (H<sub>2</sub>O) and salt (NaCl) is called electrochemical activation (ECA). This allows the hydrogen and oxygen in the water to react with the chlorine in the salt to produce 'free available chlorine' (FAC), of which the key active substance is hypochlorous acid (HClO) - this is a powerful but safe disinfectant. The sodium in the salt combines with the hydrogen and oxygen in the water and small amounts of chloride in the salt to produce a mild form of sodium hypochlorite. This is a good cleaning agent. The activation process takes minutes depending on the volume of solution required.

The performance of a disinfectant is measured by its concentration - parts per million (ppm) of the active substance - in this case FAC. Many microorganisms can be destroyed with a concentration of around 20ppm of FAC. In fact, drinking water contains free available chlorine levels of between 0.2 – 2ppm. The Toucan ECA devices can make concentrations of around 65 to 100ppm FAC. Of this, around 20% is in the form of hypochlorous acid, which has a very high efficacy in eliminating microorganisms and represents the optimum level for cleaning and disinfection maintenance.

## Test kill kinetics of cleaning solutions

Another measure - three in fact - is called 'kill kinetics', developed to measure the three stages of an effective disinfectant. These three measures consist of the kill rate or efficacy (the percentage of bacteria killed), the speed of the kill (contact time) and the rate of any regrowth.

Let's use an example and take the kill rate first. If we took a bacterial count (Colony Forming Units or CFUs) of one million on a given surface and apply disinfectant rated with a killing power of 99.9%, then 99.9% of the CFUs would be killed leaving 1,000 remaining. If a disinfectant was used with a killing power of 99.999% then only 10 of the bugs would be left alive out of the original one million. Quite effective, don't you agree?

Independent tests carried out by the University of the West of England (UWE), Department of Biological, Biomedical and Analytical Sciences, showed that the Toucan ECA solution has excellent bug killing performance (see the table to the right).

## Contact time and rate of regrowth

Now to the remaining two kill kinetics of contact time and rate of regrowth. Independent tests also prove that the solution kills on contact. That's not always the case with disinfectant solutions and some can take five, ten, fifteen or even thirty minutes. And how quickly do any surviving microorganisms recover and start to multiply after the solution has been applied? In trials, after 24 hours there wasn't any evidence of regrowth.

We've mentioned that the solution cleans as well. While the activation of the disinfectant is taking place, the sodium and chlorine in the salt is combining with the oxygen in the water to create sodium hypochlorite (NaClO); a very mild form of bleach. This compound gives the solution its cleaning properties with a pH level of between pH8.2 – pH8.7. This allows the solution to be used in most areas that would normally be used by conventional, mass-produced cleaning chemicals.

## Bioluminescent bacteria

Professor Darren Reynolds (Head of Department of Biological Biomedical and Analytical Sciences at the University of the West of England) is one of Europe's leading experts on ECA and in accordance with strict guidelines for disinfectant testing on bacteria and spores has developed the science of bioluminescent bacteria. Here, bacteria are genetically modified to give off light when alive and no light when dead. This allowed for the first time to accurately see, measure and record on video contact times and regrowth rates, creating the concept of kill kinetics.

"The solutions generated by the Toucan units have been proven to destroy microorganisms very quickly and comprehensively using only water and salt. They are highly effective against bacteria, viruses, spores and fungi, providing protection to water, surfaces, fabrics, foodstuffs and people".

*Professor Darren Reynolds of the Department of Biological, Biomedical and Analytical Sciences at UWE.*

Bacteria	Log reduction	Kill rate	CFU's remaining <small>(out of a million)</small>
E. Coli	5.80	99.9997%	1.29
Salmonella enterica	4.94	99.9997%	2.28
MRSA	6.01	99.9998%	1.23
Listeria	6.70	99.9993%	0.99

*Table 1: Independent tests carried out by University the West of England, Department of Biological, Biomedical and Analytical Sciences using the ECA solution with a concentration of 65ppm.*

# The science bit continued...

## Technology inspired by our very own immune system

When the body comes under attack from invading bacteria and viruses, the immune system responds by sending white blood cells called neutrophils straight to the infection. Once activated, these cells produce large amounts of hypochlorous acid (HOCl) to eliminate invading microbes and pathogens. This is amongst the most potent and naturally occurring disinfectants.

The ECA technology creates the same HOCl solution, but in a more concentrated form. This means the ECA solution activated by the Toucan system does not give any reaction in the form of irritation, breathing difficulties or allergies when there is contact with the skin, eyes, or mouth, making the solution totally safe to use around babies, children, the elderly, and people with compromised immune systems or allergies. Even if ingested, there aren't any harmful or irritant effects.

## Asthma and chronic obstructive pulmonary diseases

A study by Harvard University and the French National Institute of Health and Medical Research (Inserm published in May 2017) found that the regular use of disinfectant and cleaning products, such as concentrated bleach and other commonly used synthetic disinfectants, could increase a person's chance of developing chronic obstructive pulmonary disease (COPD) by nearly a third.

The study suggested regularly breathing in of strong cleaning chemicals can increase the risk of developing COPD (an umbrella term for emphysema, chronic bronchitis and chronic asthma) by up to 32%. The condition affects an estimated 1.2 million people in the UK, with nearly 30,000 people dying from the disease each year. Previous studies have linked exposure to disinfectants with breathing problems such as asthma, but it is believed that this is the first piece of research to identify a link between synthetic chemical disinfectants and COPD.

# A potted history of ECA technology

ECA technology was first developed in Russia during the 1970's by Professor Vitold Bakhir and his team at the Bakhir Electrochemical Systems and Technologies Institute in Moscow. The original concept was to develop a technology that could combat the effects of biological warfare by generating safe and effective biocides, quickly and easily on-site for use on humans, animals, equipment, crops and water supplies.

ECA systems have been further developed in South Korea, Europe and the US, and have become a mainstream technology for the production of biocides in sectors as diverse as:

- general cleaning and disinfection
- water treatment
- industrial process water in food processing and pharmaceuticals
- oil and gas sectors
- shipping ballast water management systems





# The versatility of ECA solutions

Think of ECA as a multi-purpose disinfectant and cleaner suitable for the vast majority of your daily applications.

## As a disinfectant

The solution will disinfect all hard surfaces, fabrics and water supplies to very high levels of efficacy, killing all forms of microorganisms including bacteria, viruses, spores, fungi and moulds. It eliminates biofilm, the environment that is created by microorganism on the internal surfaces of pipes and is a major source of pathogens such as Legionella, as well as killing the microorganisms in water supplies.

## As a cleaner

With a pH ranging from pH8.2 to pH8.7 it's non-aggressive and cleans polished surfaces such as stainless steel, glass, mirrors, chrome, treated wood and laminates, plastics, ceramics and porcelain. The solution is smear-free and doesn't leave a residue unlike some traditional synthetic chemicals. It also cleans and removes stains from fabrics such as carpets, chairs curtains and mattresses, making it the ultimate sustainable solution for cleaners wishing to avoid the use of chemicals.

It doesn't replace limescale removers or strong degreasers (although if used daily in commercial kitchens it will perform well in keeping cooking areas clean of fat and grease deposits), but can significantly reduce the use of chemicals on a day-to-day basis.

## As a natural deodoriser

The activated solution is a natural deodoriser, reducing and eliminating odours created in kitchens, washrooms and on fabrics by killing the bacteria that are the principal cause of the odours.

## Where it's especially useful

The solution is great for use in busy environments which demand a quick, effective cleaning regime including schools, nurseries, offices, hotels, pubs, restaurants, shops, public buildings and clinics, but especially where green credentials are important. Or where harsh cleaning products aren't suitable for the environment or those using it.

The system can be easily situated in any building to provide an on-site, on-demand generation of safe and environmentally friendly disinfection and cleaning solution.

## What cleaning products can be used with ECA solution?

An advantage of the solution is that you don't need to change your current cleaning practices or use specialist equipment, other than the Toucan activation system. So, you can carry on using the same mop and bucket to apply the solution to the floor, the same spray bottle to spray the solution onto glass, stainless steel, tiles and mirrors.

It's a perfect solution to use with Robert Scott's range of microfibre cloths and mopping systems including the Stream microfibre flat mop and the Cleano range. In fact, it's the perfect partner for practically any cleaning equipment. It is ideal when matched to the application - so Robert Scott's Hi-Shine microfibre cloth for polished surfaces or Mi-cloth where cross-contamination is an issue.

Another great application is the use of the Fogmister to produce a fine mist of the solution as an excellent way to disinfect spaces and objects without the need to spray and wipe every surface. The solution dries naturally onto the surfaces and, as it's non-toxic, the misting application is particularly useful in schools, nurseries and care homes.

## Where can the solution be used?

Work surfaces, glass, windows and mirrors	Ceramics, stainless steel, chrome and metals	Kitchen, canteens and food preparation areas
Fabrics, carpets and mattresses	Plant and equipment	Floors and walls
Washrooms, toilets and showers	Textiles and fabrics	Offices, restaurants, schools, clinics and public areas

## What cleaning products does it replace?

Disinfectant	Glass cleaner	Sanitisers
Floor cleaner	Hard surface cleaner	Stainless steel cleaner
Fabric cleaner	Washroom cleaner	



# Key features and benefits

ECA solutions deliver an amazing range of benefits from a system that is so easy and economical to adopt. The process has been compared to modern-day alchemy as it transforms everyday water and salt into a powerful disinfectant and cleaning solution that's completely natural and won't harm the environment. Here's the full rundown of its many talents:

- 1 Fast acting
- 2 Up to 99.999 kill rate
- 3 Minimal regrowth
- 4 Powerful disinfectant
- 5 Effective cleaner
- 6 Eliminates odours
- 7 Shiny polished surfaces
- 8 Wipe, rinse, spray, mop
- 9 Non-allergenic
- 10 Environmentally friendly
- 11 Non-toxic and non-hazardous
- 12 pH8.2 - pH8.7
- 13 Multi-surface application
- 14 Saves money
- 15 On-tap production
- 16 Naturally occurring oxidant
- 17 750g salt makes 375 litres of solution
- 18 Perfect with microfibre
- 19 Meets the requirements of BS EN 1276 Chemical disinfectant - quantitative suspensive tests
- 20 Meets the requirements of BS EN 13704 Chemical disinfectant and antiseptics
- 21 2013 The Cleaning Show Innovation award for best eco-green product
- 22 2011 British Toilet Association Innovation Awards



## The Robert Scott Toucan ECA range

Toucan, our electrochemical activation bio-cleaning system, produces an effective, non-toxic and environmentally friendly disinfectant and cleaning solution on-site. The range comes in two wall-mounted sizes depending on the size of the facilities, and a worktop model for smaller and domestic areas.

### **Toucan ECA Active**

Ideal for small to medium sized facilities, including restaurants, pubs, schools, nurseries, offices, clinics and care homes. One single activation will produce 10 litres of cleaning solution equivalent of around 16 x 600ml spray bottles. The system includes a generator, 10 litre tank, brine salt dispenser, discharge tap and shelf. Code: 100520.



### Toucan ECA Active Plus

For use in medium to large facilities where on-site generation of combined disinfectant and cleaner solution offers greater cost, environmental and operational benefits to facilities management and their clients. It is supplied with programmable generator, 25 litre tank, brine salt dispenser, container and discharge tap. Code: 100521.



### Toucan ECA ECO III

The Toucan III is designed for small facilities where the daily use of disinfectant and cleaning chemicals are not so high. The kit includes a worktop activation unit, 1 litre container, measuring spoon, mixing rod, spray bottle and some salt to get you started. Code: 104004.

# The business case

The main cost of using ECA is the capital expenditure needed for the device. Once installed, the only consumables needed to generate unlimited quantities of the solution are salt, water and minimum electricity. The cost of production of the activated salt water solution is incredibly low with 750g of ordinary table salt making around 375 litres of disinfectant and cleaning solution.

The system is virtually maintenance-free and requires no specialist skills to operate. On-site generation of your own disinfectant and cleaning solution eliminates the need for:

- back-office procurement
- delivery costs
- inventory processes
- waste packaging disposal
- specialist removal of dangerous chemicals

Plus, with no COSHH requirements or costly health and safety training, Toucan ECA is the sustainable and simple choice.

## Cost of materials

Water	Available on-site and insignificant in cost.
Salt usage	30ml of salt brine generates 10 litres of disinfectant and cleaning solution. 10kg of salt tablets will produce approximately 10,000 litres of product (dependent on unit used). Salt costs can be as low as £0.50/kg.
Power consumption	Approx. 50W for three minutes at around 0.05p per litre generated. Electric consumption for 1 litre of solution is less than 5% of a kettle boiling.
Cost of production	Salt usage at 2g/litre = 0.1p. Power usage at 12.4p/kwh = 0.05p. Total cost of production approx. = 0.15p/litre.

## How to calculate break-even\*

To work out break-even – how long it takes to pay for the capital investment in chemical savings – simply use the following calculation.

Cost of the capital investment  
/ Monthly chemical spend  
= Months to break even.

For example: £1,500 / £250 = six months to breakeven, after which point saving £250 each month. (This example is based on the Toucan ECA Active).

*\* Please note, we estimate that the ECA solution will replace 90% of your maintenance disinfectant and cleaning applications, except as a heavy degreaser and descaler. Used daily in commercial kitchens, it will perform well in keeping cooking areas clean of fat and grease deposits.*



# Where it's being used

ECA systems are currently being used in many different applications across a varied range of facilities.

## **FM cleaning company across multiple locations**

Toucan ECA solution is being used in over 1,000 workplaces by cleaning companies managing facilities such as Geneva and Copenhagen airports, NHS Blood & Transplant Service, London School of Hygiene & Tropical Medicine, Volvo Trucks, Warwickshire County Council, and many more.

## **Trial underway in a leading UK restaurant chain**

The system is also being trialled by a well-known restaurant chain to clean without the need for chemicals. As part of the trial, the disinfectant properties and cleaning effectiveness have been verified and audited by their own nominated independent laboratory. Plans are now in place to roll out the technology to further restaurants for evaluation.

An interesting outcome of this trial is that due to the solution's popularity, its low cost and the fact it is totally harmless has meant it is freely available for staff to take home and use during their domestic cleaning routine!

## **Washroom hygiene applications**

A new development involves a leading international manufacturer of washroom products. The aim is to help develop a range of products that allow ECA solutions in commercial washrooms to be used for automated disinfecting, cleaning and deodorising. This also includes innovative hand sanitising solutions in mist-form to reduce water, soap and power usage.

## **Disinfect water supplies in hospital**

Water-borne pathogens in clinical environments represent major health risks to patients. ECA solutions are currently being tested at Frankston Hospital in Melbourne, Australia. This is to disinfect hospital water supplies to eliminate pathogens such as Legionella, which propagates in biofilm created by microorganisms in water pipes. The ECA solution destroys both the biofilm and the pathogens.

## **Shipping ballast water management systems**

New, international regulations are coming into force to control and manage the quality of ballast water in commercial ships. This directive requires the elimination of microorganisms in ballast water combined with zero discharge of chemical residues into the environment.

## **Other applications around the world**

ECA is also being put to work in schools, universities, warehouses, national and regional government facilities and the Armed Forces. Plus, cleaning and disinfection applications on Stena Ferries, fish processing in the Faroe Islands, meat processing plants in Brazil and Chile, water supply disinfection for hospitals and dental clinics in UAE and Australia, carpet cleaning applications in Denmark, and salad packaging in Austria.

# Environmental and test credentials

The ability to reduce a business's carbon footprint and enhance its environmental commitments and credentials is considerable. The use of ECA products helps contribute to CSR (corporate social responsibility) policies by reducing the carbon footprint of disinfection and cleaning products when compared with bought-in synthetic chemicals. Reductions in transport, packaging and disposal can be easily achieved, reducing the burden of plastic waste on the environment, as well as the overall environmental benefit of reducing toxic chemical manufacture and distribution. Other points include:

- The system only consumes water and salt.
- No synthetic chemicals are required on-site to disinfect and clean.
- The power requirements are very small with a 50W power rating.
- Zero heat is generated in the activation process.
- All packaging used is recyclable.
- Products are Waste Electrical and Electronic Equipment Directive (WEEE) and CE compliant.

The product is non-toxic and non-hazardous to the environment, and if discharged into drains rapidly reverts back to mildly salty water on contact with any organic matter. For added reassurance, no Bisphenol A (BPA) is used in any of the system components.

## **Certification and food safety**

The activated solution is certified under EN1276 and EN13697 chemical disinfectant and antiseptics as being safe to use as a general disinfectant and also safe in food preparation areas. In addition, certification under EN13727 (ESBL) and the VAH scheme (medical grade biocides) demonstrate efficacy in risk areas. Independent laboratory microbiological test results and reports on the safety and efficacy of the solution are also available.

The ECA solution is ideal for use in kitchens and food preparation surfaces, as it doesn't have a residual odour or taste.

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## **Why is ECA solution different?**

Solutions generated using ECA technology from just water and salt is a non-synthetic process. Water and salt are natural products and naturally sustainable. Both are essential for life – we need daily intakes of water and salt to live. All life has evolved to depend on its chemical properties to survive. In fact, salt is so vital to humans that the word 'salary' comes from the Latin word for salt – salis – an indication of how important and valuable salt was across the ages.

The two compounds of water and salt are restructured during the ECA process, but still contain the four elements of hydrogen, oxygen, sodium and chloride. This process, and the products it generates, are natural and do not harm the environment, either in production or use. They are safe for people to use and safe for the environment. Once used, the solutions revert back to slightly salty water, safe for the environment. How many synthetic chemicals can you say this about?

## **Some interesting facts you might not know:**

- Chlorine in one form or another accounts for 95% of the world's drinking water disinfection to help provide safe drinking water.
- The disinfection of drinking water with chlorine has saved millions of people worldwide by providing clean, healthy water for drinking and washing.
- The government's recommended daily intake of salt is six grams for an adult. That means we should be ingesting 2.4 grams of sodium and 3.6 grams of chloride per day to stay healthy.
- There are many species of chlorine – hypochlorous acid generated from the ECA process is very safe to use as it is non-hazardous, non-toxic and non-allergenic.
- Humans and all animals produce HOCl as part of our bodies natural defence against infection caused by bacteria, viruses, pathogens, etc. Without this, we would soon fall ill with infections.
- Over 70% of the world's surface is covered by sea water. Salt and water combined are the precursors for the ECA generation of HOCl and NaOCl.

# Frequently asked questions

## **Does it work?**

Yes, it does. It is a proven and effective disinfectant and cleaning solution with very high kill kinetics (contact time to kill) efficacy (log reductions) and minimal regrowth. Log reductions of log 5 are achieved (99.999% reduction) against bacteria, spores, fungi, moulds and viruses. The solution is also a mild surfactant, providing clean, smear-free surfaces.

## **Is it going to save money?**

Absolutely once the capital investment has been paid for, which is relatively low. The cost of producing the solution is virtually free at around 0.15p per litre. There are no on-going procurement, transport, storage, inventory or disposal costs that are associated with traditional chemical products.

## **Will it support our environmental strategy?**

Most definitely! The solution has minimal environmental impact and reduces the use of more harmful chemicals. The solution is generated from natural and sustainable compounds of water and salt, and minimal amounts of electricity are required. It's non-toxic, non-hazardous, non-allergenic, requiring no PPE. After use, the solution reverts back to slightly salty water leaving no hazardous footprint. There's also no manufacture of synthetic chemicals, no transport, no packaging or waste product disposal required other than the original production of the on-site equipment.

## **What do I need to install the system?**

The systems are easy to install and operate. The unit requires a mains water supply and 220V power socket. The tanks have a footprint of 42x15cm for 10 litre capacity and 34x26cm for 25 litre capacity. The control box with the electronics is wall mounted above the tank and is roughly the size of an A4 piece of paper.

## **How do I make the solution?**

It will take from four to 30 minutes depending on the unit used. Fill the activation tank with clean water to capacity. Add the required amount of salt brine solution from the pump dispenser (for example one pump or 30mls for the 10 litre tank) and press the activation button. In the case of the 10 litre machine the activation light will switch off after 15 minutes meaning 10 litres of solution will have been activated. The solution will have a 100 PPM (FAC) concentration and is ready to be dispensed as required into spray bottle, buckets, or mopping systems. Need some more? Then simply repeat.

## **How can you tell if the system is working?**

We recommend periodical checks to make sure the activation system is working. This includes the three tests of 'bubbles, smell and chlorine' as follows:

1. Check the solution bubbles when the system is activated. This indicates that the chemical reaction is taking place.
2. Smell the solution. Once activated, it should have a faint 'swimming pool' scent of chlorine.
3. Chlorine reacting paper is available which proves the presence of chlorine in the activated solution.

## **How and where to use the solution?**

The surfaces to be disinfected and cleaned should be sprayed first to get full contact between the solution and the surface. Robert Scott's disposable microfibre cloths are recommended to ensure no transfer of contaminants between surfaces. Dampen the cloth with the ECA solution before wiping over the surface.

## **What is the shelf life of the activated solution?**

The ECA solution remains activated for around five to six days before reverting back to salty water. Your system should be sized so that enough ECA solution is made to meet daily usage. If there's any doubt about how old the solution is in the activation tank, it can be reactivated simply by pressing the activation button.

## **Does using soft or hard tap water affect the solution?**

No, there isn't any issue with the hardness of water in your location as the system operates without the need for descaling due to the reversible polarity of the system.

## **Do we need to change normal cleaning habits?**

No, there's hardly any difference in the way you clean using chemical dispensing systems. It doesn't affect your current cleaning regimes, and you can still use the same cleaning hardware – wipes, cloths, mops, etc. Plus, the system is virtually maintenance free.

## **What do I do when I run out of solution?**

Don't worry, that's a really easy question to answer and solves the regular problem of 'I've nearly run out my cleaner' or 'I'm waiting for new supplies'. When you run out you simply activate the system and make more. Click and wait the required 15 or 30 minutes required and you have a new batch of 10 or 25 litres. It's that simple.





For further information please contact Steve Courtney,  
Business Development Manager, on [stevec@robert-scott.co.uk](mailto:stevec@robert-scott.co.uk)



**Robert Scott & Sons Ltd**

Oak View Mills  
Manchester Road  
Greenfield  
Oldham  
OL3 7HG

**T:** 01457 819400

**E:** [info@robert-scott.co.uk](mailto:info@robert-scott.co.uk)

**[robert-scott.co.uk](http://robert-scott.co.uk)**

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