



**Frequently Asked Questions - EMEA  
CUSTOMER VERSION**





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# INTRODUCTION

## 1. What is OSG technology?

On-Site Generation (OSG) is an innovative technology that enables cleaning solutions to be made on site. OSG technology uses an electrolysis process to convert water, electricity and a small amount of salt into effective cleaning and disinfection solutions. It eliminates the need for most conventional packaged chemicals that have been used for years to clean education facilities, hospitals, public venues, casinos, retail stores and many other spaces.



## 2. What are the benefits of Orbio<sup>®</sup> OSG?



**Simplified cleaning process** — one Orbio<sup>®</sup> OSG unit replaces a wide range of multi-coloured concentrates. Just as important, it reduces the training requirements for new cleaning staff on multiple chemicals, their dilutions and applications. This simplified cleaning process can also help reduce lost-time accidents.



**Improved health and safety** — this technology reduces employee, customer and cleaning team exposure to highly concentrated conventional chemicals. OSG solutions have no added fragrances, which reduces unwanted odors and improves indoor air quality.



**Enhanced brand reputation** — Orbio<sup>®</sup> OSG technology can enhance your brand reputation by making a bold statement that your enterprise is committed to “doing good.”



**Lower “hard costs”** — generating cleaning solutions on site significantly reduces weekly or monthly purchasing, shipping and disposal of most daily-use packaged chemicals.



**Reduced environmental footprint** — a life cycle assessment by a third-party expert demonstrates the dramatically reduced environmental footprint of OSG compared to shipping conventional packaged chemicals\*.



**Lower “soft costs”** — OSG technology can dramatically reduce soft costs such as training, ordering, stocking and inventorying of most daily-use packaged chemicals. It’s a mix of simplicity and science — fewer steps, better outcomes.

\*LCA by EcoForm for the Orbio 5000-Sc is available at [orbio.com](http://orbio.com)

## INTRODUCTION *(Cont.)*

### 3. How does Orbio<sup>®</sup> OSG technology work?

Uncomplicated OSG devices, which are relatively low cost and simple to maintain, are connected to a facility's tap water supply, drain and standard electrical outlet. Softened tap water and salt are combined and the mixture flows into an electrolytic cell. This water electrolysis process creates two separate streams — a cleaning solution and a disinfection solution.

Built-in sensors measure critical output parameters in both solutions to ensure efficacy. The solutions are then dispensed into spay bottles, automatic scrubbers, all-surface cleaners and carpet extractors for cleaning crews to use.

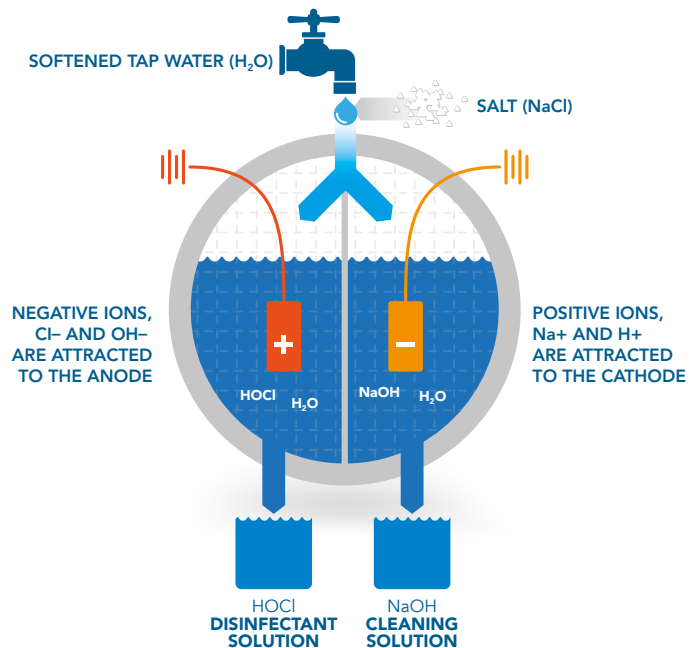
Instead of a cluttered closet full of multi-coloured chemicals, cleaning crews have two simple choices — cleaning solution or disinfection solution. The Orbio<sup>®</sup> OSG solutions contain no dyes, buffers, chelating agents or complicated dilution processes of conventional packaged chemicals.

### 4. Who is Orbio<sup>®</sup> Technologies?

We are a Tennant Company Group and a leading innovator in sustainable technologies that provide effective cleaning without the use of conventional daily use chemicals. Using electrolyzed water technology, the Orbio<sup>®</sup> portfolio solutions enable cleaning devices and equipment to achieve the same effect without the hazards or large environmental footprint associated with the use of traditional packaged chemicals.



### ELECTROLYZED WATER PROCESS



### 5. How is Orbio different from competitors?

The new Orbio<sup>®</sup> os3 system delivers what the market has been asking for — small, simple and affordable OSG technology. Orbio Technologies is backed by the strong financial and R & D support of Tennant Company, which has been going strong for 143 years. Our proven, groundbreaking product development uses Split Stream Technology based in the science of electrochemistry. We also have one of the largest service and support networks in the industry — utilizing our Direct and Authorized Distributor network for sales and service support.

## TECHNOLOGY

### How does the Orbio<sup>®</sup> os3 work?

The os3 uses Orbio<sup>®</sup> Split Stream technology which is based on the electrolysis process. Water, salt and electricity are used to create a low concentration of sodium hydroxide (NaOH), an effective cleaning agent as well as a low concentration of hypochlorous acid (HOCl), an effective hard surface disinfectant.



## CLEANING APPLICATIONS

(Orbio<sup>®</sup> MultiSurface Cleaner)

### 1. Where can I use Orbio MultiSurface Cleaner?

Orbio Multi-Surface Cleaner can be used on hard and soft surfaces, vertical and horizontal surfaces, on and off the floor. It is effective on:

- Hard floors - vinyl composite tile (VCT) – with or without floor finish, terrazzo (sealed or unsealed) , sealed, polished or open concrete, sheet vinyl, granite, natural stone, sealed wood, rubberized flooring and other hard flooring surfaces.
- Soft floors (carpeting) – Nylon, wool, polypropylene (Olefin), and polyester (always check carpet manufacturer specs for color stability and non-shrinking properties before using a water based product)
- Windows, mirrors, doors, walls, and other surfaces made of glass, Plexiglas, plastic, sealed wood, stainless steel and other hard non-porous surfaces.

### 2. What products can it replace?

- General-purpose and neutral pH daily cleaners for hard floors
- Alkaline floor cleaners and degreasers designed for organic greases and oils
- Pre-spray cleaners for soft floors
- In-tank cleaners for soft floors
- All-purpose cleaners
- Glass cleaners
- Stainless steel cleaners

### 3. What specific types of machines or tools can I use it in?

- Automatic scrubbers (riding or walk-behind)
- Carpet Extractors (Canister with wand, pull-back, walk-behind, riding or spotters)
- Bonnet pad cleaning – carpet (single disc use)
- Interim Carpet Cleaners/Soil Transfer (ReadySpace<sup>®</sup> Technology)
- Spray bottles (spray and wipe applications)
- Micro-fiber flat mop systems
- Standard mop & bucket systems
- All-surface cleaners and high pressure washers

REPLACE THESE



WITH THIS



IN THESE



## Orbio MultiSurface Cleaner (ready to use)

### 1. What does the Orbio MultiSurface Cleaner solution contain and what is its pH?

It is a low concentration of sodium hydroxide (NaOH), a raw material commonly used in cleaners and detergents to improve cleaning performance on oils, fats and proteins. The pH is 10 to 11.5.

### 2. How is the Orbio Multi-Surface Cleaner composition different from conventional cleaning chemicals?

Most conventional cleaners typically contain chelating agents which enhance performance in hard water areas. Many chelating agents are on the top of raw material lists of environmental concerns because they don't readily biodegrade. Due to the use of an integral water softener, the Orbio Multi-Surface Cleaner does not need these chemicals of concern for effective cleaning performance.

In addition, many conventional cleaners also contain solvents, alcohol, surfactants, dyes or fragrance, all of which are absent in the clear, fragrance-free, yet effective Orbio Multi-Surface Cleaner.



### 3. How long does the Orbio Multi-Surface Cleaner solution remain effective?



- Autoscrubber, extractor, All-surface Cleaner - 30 days



- Spray bottle – 30 days if filled and kept capped.



- Sealed container used to fill other bottles – 90 days if filled and kept capped (in an os3 generator or satellite tank container both in Multi Surface Concentrate form)



- Microfiber flat mops system –8 hours, if soil is not introduced into the solution.



- Open bucket –8 hours. As with conventional cleaning chemicals, the efficacy will degrade quicker if a soiled tool (like a soiled string mop or soiled hand cloth) is dipped and re-dipped into the solution.

# Orbio MultiMicro™ 200\* SOLUTION (ready to use)

## 1. What does the MultiMicro 200 solution contain and what is its pH?

It is a low concentration of hypochlorous acid (HOCl). The pH is 6 – 8 in this ready to use form.

## 2. What is hypochlorous acid?

Hypochlorous Acid (HOCl) is a weak acid which forms when chlorine dissolves in water. HOCl is the most prevalent form contributing to the free available chlorine (FAC) at near-neutral pH levels. It is used for disinfection.

## 3. How is hypochlorous acid different than bleach (sodium hypochlorite)?

Bleach or sodium hypochlorite (NaClO) is an effective disinfectant, like hypochlorous acid (HOCl). However, due to its typically higher concentration in contributing to the free available chlorine (FAC) at higher pH levels (10 – 11), it exhibits a typically strong chlorine odor, a bleaching effect on many surfaces, as well as a short shelf life in ready to use form - typically 1 day.



\*MultiMicro 200 refers to MultiMicro Concentrate that has been diluted by the Orbio® os3 dispenser to the ready-to-use form containing 200ppm free available chlorine.

# DISCHARGE STREAM

## Why is there a discharge stream?

Electrolysis process creates two streams. The os3 produces both the MultiSurface Cleaner Concentrate and the MultiMicro Concentrate at the same time, regardless of if one or the other of the tanks is full. When the Generator's tanks are full and one of the solutions is dispensed, it will automatically begin to generate more solution to begin refilling both of the tanks. The solution created for the full tank will overflow and be discharged down the drain. The unit's water softener also produces a very small discharge stream.

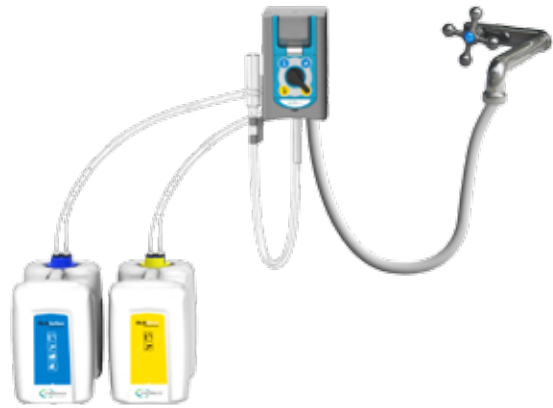
# OPTIONAL ORBIO<sup>®</sup> os3 SATELLITE SYSTEM

## 1. What is the os3 Satellite System?

The optional os3 Satellite System is an Orbio innovation that allows the dilution and dispensing of either or both the Multi-Surface Cleaner and the MultiMicro 200 at remote areas, away from the main os3 generator. Solution Transport Containers holding the concentrates created at the generator are automatically filled via a hose set. Once filled, these containers are moved to remote areas where they are connected to a dispenser and diluted as needed.

## 2. How is the number, location, configuration, etc. of satellite locations determined?

Orbio Sales representatives will work with customers to conduct a Site Survey. A recommendation of the number, location and configuration of os3 generators as well as number, location and configurations of any satellite stations will be made, based upon detailed information gained during the survey.



## 3. How many satellite systems can one generator support?

This is dependent upon the amount of solutions dispensed from the generator and demand placed on the same generator to refill the Transport Containers to be used at the Satellite Stations. As a guide, the Transport Containers are filled at a rate of 1.0 G/3.8 L per hour for the MultiSurface Concentrate and 1.4 G/5.3 L per hour for the MultiMicro Concentrate.



# INSTALLATION

## 1. Who installs it?

The Orbio Authorized Distributor, its subcontracted professional installers, the end-user or Tennant Sales will inspect the site to determine whether there are any required modifications to plumbing or electrical connections. Any necessary modifications to plumbing and electrical connections are the responsibility of the customer and must be done before the installation of the os3. Necessary specifications and guidelines will be supplied. The Orbio Authorized Distributor, the end-user or Tennant Service will then connect the components and ensure it is operating correctly and provide training for the site operators, managers, etc.

## 2. What is needed for installation? (power, water flow, drainage, etc.)

The os3 Generator can be installed in most locations with the following:

- A standard AC power outlet in 120V/60 Hz or 240V, 50/60 Hz
- A water supply with a minimum of 3 gpm/11 Lpm flow and a minimum of 30 psi/2 bar pressure
- A drain that can accept a minimum 2.0 gpm/7.6 Lpm

The os3 Satellite System without a water softener only requires:

- A water supply with a minimum of 3 gpm/13.2 Lpm flow and a minimum of 30 psi/2 bar pressure and maximum of 85 psi/6 bar pressure.



Complete instructions and guidance for installation will be supplied.

## 3. Can hot water be supplied to the os3 unit?

No. High water temperatures do not electrolyze properly and can cause potential damage to the various plastic and other components in the generator and water softener. Cold or room temperature water must be used as a supply.

## 4. Where is the unit typically installed in a facility?

The best location for the os3 Generator is typically where the cleaning machines are filled today. The best location for the os3 Satellite System is typically where spray bottles or buckets are most often filled today.

# CONSUMABLES AND MAINTENANCE

## 1. What consumables are needed to keep the unit operating?

The only consumable that is needed to be added to the water softener is standard water softener salt pellets.



## 2. Is special salt required?

Standard water softener salt pellets (typically 1"/25mm x 3/4"/18mm) used in residential or commercial water softeners that are made from solar or evaporated methods are required. Rock salt, ice melt, table salt or salt other than salt pellets cannot be used.

## 3. What other maintenance is required?

The os3 Generator has three wear components. The os3 Generator displays the "status" of the life of each of these components through a screen on the display. When the expected life of the component(s) is nearing its end, the unit will begin to display an icon on the "Home" screen, indicating to the operator or site manager that replacement of the component is nearing.

## 4. Who services and maintains the os3?

Planned maintenance and service programs are available through Tennant Service and through Authorized Orbio Distributors. Alternately, customers may elect to maintain and service the os3 themselves.

# TESTING AND THIRD PARTY VERIFICATIONS

## 1. What hard surface cleaning tests were done with the Orbio<sup>®</sup> Multi Surface Cleaner?



In third-party testing conducted by TURI (Toxic Use Reduction Institute) the Orbio Multi-Surface Cleaner worked as well as two comparative products using manual cleaning for all purpose soils and worked as well as two comparative products for glass soil removal using manual wiping. This third-party test report as well as a Test Summary Sheet is available.

## 2. What carpet cleaning tests were performed or listing does the Orbio MultiSurface Cleaner have?



The Orbio MultiSurface Cleaner is part of a Deep Cleaning System that has CRI (Carpet and Rug Institute) Platinum Level Seal of Approval. Seal of Approval can be viewed at [www.carpet-rug.org](http://www.carpet-rug.org) A one page certificate is also available.



The Orbio MultiSurface Cleaner is a WOOLSAFE approved environmentally preferred product for use on wool and advanced generation synthetic carpets and rugs. A one-page Green WOOLSAFE certificate is available.



The Orbio MultiSurface Cleaner has been tested by Professional Testing Laboratory (PTL) and proved to protect against carpet resoiling in 2 real world scenarios.

## 3. What other listings or approvals does the Orbio MultiSurface Cleaner have?

The Orbio MultiSurface Cleaner is currently undergoing review and certification by Green Seal to GS-37 standard as an environmentally-responsible cleaner. A one-page certificate and letter of registration will soon be available.



The National Floor Safety Institute (NFSI), a not-for-profit group dedicated to reducing slip-and-fall accidents, has certified the Orbio MultiSurface Cleaner as a high traction product. NFSI certified products must pass a two-phase wet slip resistance process and have been shown to reduce the potential for slip-and-fall accidents. A one-page certificate and letter of conformance is available.



The Orbio MultiSurface Cleaner is registered by NSF International (NSF) as acceptable for use as a general cleaner, floor and wall cleaner in and around food process areas where it is not intended for direct food contact. A one-page certificate and letter of registration is available.



The Orbio MultiSurface Cleaner is acceptable for use in food processing facilities as a non-food chemical product by the Canadian Food Inspection Agency (CFIA). A two-page acknowledgement letter is available.