

## **Tersano Cleaning System Overview**

What is in this packet

- Overview of Tersano System (Attached)
- Numbers from NorthRidge on the Testing (Attached)
- RLU Testing Chart (Attached)
- Reason for looking into this system (Below)
- Data points we looked at (Below)
- Decision moving forward (Below)

### **Reason for looking into this system:**

Jerry Spidell, our High School Head Custodian, brought the idea of moving away from chemicals to me. He asked if I knew anything about it or wanted to learn more. I started researching and found that Ozon water is a cleaning product that has been around for some time. I then asked our Capital Sanitary Supply representative if they had heard about this. They said they had, and that Urbandale had been using the Tersano system for years. I then reached out to Urbandale to see what their thoughts were. They switched to Tersano water in 2019 and have used it as their disinfectant and general cleaner ever since. The results they got with Tersano water for disinfection were better than those with the recommended bleach water during the COVID pandemic. I also met with a Tersano distributor to learn more about their system. ADM has also been using Tersano for the last 5-6 years. The director there says this has been a good change and that they use Tersano for about 90% of their cleaning needs in the district. He stated that it does really well on carpets and mirrors.

### **Data points we looked at:**

One Cartidge of the Tersano system can turn about 800 gallons of water into a disinfectant for 24 hours and general purpose cleaner for 6 days. At North Ridge one cartridge lasted 33 school days (we did use some on weekends but majority was during the week). The cost of one cartridge is \$290 and will do more then our normal chemical we use.

Currently in a month we use around:

- 2 Gallons of Envirox Orange Cleaner- \$169.99
  - 3-Gallons of Purell-\$31.26
  - 2-Gallons of Expo Cleaner-\$49.48
  - 2-Gallons of Kalblooney-\$51.76
- Total for just these products is \$302.49

The benefit to Tersano system is that it can do all the things the above products can do plus also be a Glass Cleaner, Carpet Cleaner, and a spot cleaner in our buildings. This will help to reduce the amount of other products that we will use.

Another Date point we looked at was the Testing we did with our Hygiene ATP Tester to look at the cleanliness of different surfaces in our building (Information Attached). The test numbers are attached to this report.

**Decision Moving Forward:**

We have ordered a Tersano Dispensor system for each of our elementary buildings. We will work on getting these installed over winter break. All current chemical at these buildings will get moved to our Middle School, Oak View, and High School sites to use in these locations. As we phase out of chemical we will bring these sites on line with the Tersano system. The goal will be to have every building using this system as we go into the summer and start to do our deep clean of buildings.

This decision is being made based on two main factors. One the health and safety of our students and staff. Being able to use Ozone water and not have to rely on chemicals is a health and safety win for our district. Second is the consistency this will bring across our district. Every building will be using the same system to clean and sanitize our buildings. We will be able to redesign our cleaning process and training across the district. This one change will create multiple opportunities for improvement on our current system across the district.

# tersano®

## lotus® PRO V9

Cleaner, Disinfectant, Deodorizer

Transforms tap water into  
Stabilized Aqueous Ozone (SAO),  
a simple, safe, sustainable alternative  
to traditional cleaning chemicals.



Bactericidal, yeasticidal, fungicidal, effective against  
listeria, salmonella, e. Coli, staph, and more.

### SIMPLE

- Eliminates need to purchase, transport, store, and manage various cleaning chemicals
- All-in-one solution, simplifying cleaning tasks and standardizing training for staff
- Capture live data, track usage, manage inventory, and generate sustainability reports with IoT

### SAFE

- No quats, dyes, residues, irritants, fragrances, or preservatives
- Reduces risks of slip-and-falls, with slip and fall co-efficient meeting industry standards
- Dermatologically approved for sensitive skin, protecting individuals with allergies/sensitives

### SUSTAINABLE

- Reverts to water and oxygen after use, leaving no environmental impact
- Reduces plastic packaging, bottles, and waste
- 100% recyclable SAO cartridges with tersano's Recycling Program

### PROPERTIES

**Cleaner:** natural oxidizer effectively cleans away organic dirt

**Disinfectant:** effective bactericidal, fungicidal, and yeasticidal action

**Deodorizer:** attacks odors at the source, eliminating up to 99% of odors

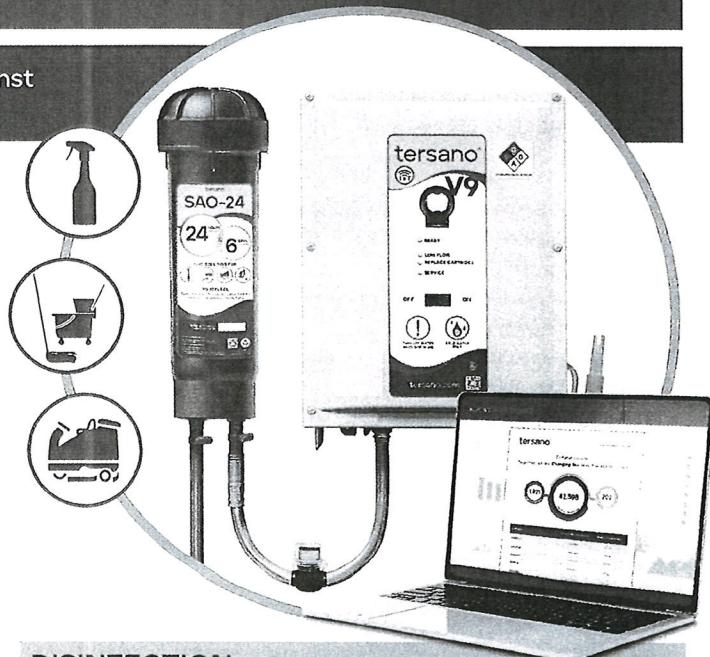
### USES

Clean, disinfect, and deodorize hard, non-porous surfaces including contact points, equipment, food prep areas, stainless steel, glass etc. No rinse required.

**Applications:** glass, stainless steel, chrome, flooring, hardwood, vinyl, tile, carpet, terrazzo, stone, fabrics, upholstery, toilets, urinals, countertops, sinks, and more.

**To replace:** multi-purpose, bathroom, kitchen, stainless steel, glass cleaners, and disinfectants, sanitizers, deodorizers, and more.

**Industry applications:** hospitality, healthcare, education, government, manufacturing, transportation, retail, foodservice, QSRs, office facilities, agriculture, and more.



### DISINFECTION

Micro-Organism	Standard	Reduction	Time	Concentration	Temperature
<b>Bactericidal*</b>					
Escherichia coli ATCC 11 229	EN 1276 EN 13697	>99.99% >99.99%	1 min 5 min	1.0 ppm 1.0 ppm	20 °C 20 °C
Staphylococcus aureus ATCC 6 538	EN 1276 EN 13697	>99.99% >99.99%	1 min 5 min	1.0 ppm 1.0 ppm	20 °C 20 °C
Pseudomonas aeruginosa ATCC 15442	EN 1276 EN 13697	>99.99% >99.99%	1 min 5 min	1.0 ppm 1.0 ppm	20 °C 20 °C
Enterococcus hirae ATCC 10541	EN 1276 EN 13697	>99.99% >99.99%	1 min 5 min	1.0 ppm 1.0 ppm	20 °C 20 °C
Listeria monocytogenes ATCC 19 115	AOAC 960.09	>99.99%	30 secs	0.5 ppm	20 °C
Salmonella typhimurium ATCC 14 028	ASTM E1153	>99.99%	2 min	0.7 ppm	20 °C
<b>Virucidal*</b>					
Coronavirus MHV-3	EN 14476	>99.99%	1 min	1.0 ppm	20 °C
Influenza A Virus (H1N1)	EN 14476	>99.99%	1 min	1.0 ppm	20 °C
Measles Virus	EN 14476	>99.99%	1 min	1.0 ppm	20 °C
Syncytial Respiratory Virus	EN 14476	>99.99%	1 min	1.0 ppm	20 °C
<b>Yeasticidal*</b>					
Candida albicans ATCC 10 231	EN 1650 EN 13697	>99.9% >99.9%	5 min 5 min	1.0 ppm 1.0 ppm	20 °C 20 °C
<b>Fungicidal*</b>					
Aspergillus brasiliensis ATCC 16 404	EN 13697	>99.9%	15 min	1.0 ppm	20 °C

\*To be validated by BAuA through the BPR process. Approved claims vary by region, check with your local representative for locally approved claims. All standard protocols are modified for the in situ generation of Stabilized Aqueous Ozone. BS EN 13697: EN 1276:2019 standards were done under clean condition protocol. tersano's SAO® is created by a dispenser regulated as a pesticidal device manufactured at EPA Establishment No. 089093-CAN-001.

**SIMPLE · SAFE · SUSTAINABLE**

wecare@tersano.com • 1.800.808.1723

REV 01.2025

# tersano®

## INSTRUCTIONS FOR USE

### On Surfaces and Equipment:

1. Fill spray bottle with ready-to-use SAO solution.
2. Spray surface until evenly coated.
3. Allow surface to remain wet for a minimum of 30 seconds.
4. Wipe dry with a microfiber cloth, paper towel, or sponge. No rinse required.



### On Floors:

1. Fill floor cleaning equipment (mop bucket, auto scrubber, carpet extractor, etc.) with ready-to-use SAO solution.
2. For mop applications, apply in sections using "figure 8" motions.
3. Replace solution when mop bucket contents become visibly soiled.



For machine applications, refer to facility requirements and the manufacturer's instructions.



## PRECAUTIONS FOR USE

- For professional use only.
- Not classified as a health hazard or biohazard.
- Observe good hygiene practices, like wearing PPE.
- For additional information, refer to tersano's SDS.

## LEGISLATION

EPA Site Registration No.: 89093-CAN-001

CSA: Tested to CSA Standard E60335-1/4E:03 by TUV

UL: Tested to UL Standard 979 by TUV

Europe: EUoTA, CE and EN 60335-1/A2:2006 compliant

Health Canada (PMRA): PCPA Registration No. 34714

Watermark: License #WM-022610

ASSE: Tested to ASSE Standards 1055-2009 by CSA Group

FDA GRAS Designation: 21CFR184.1563

HACCP Registration No.: PE-684-IO-03

GECA License No.: #GSP-2019

NSF International Registration No.: 152236

Cleaning Standard: Meets Green Seal® GS-37, GS-53 Standards

OSHA: Off-gas O<sub>3</sub> < 0.1 ppm PEL

California Code: Does not contain VOCs

Food-Contact Surfaces: NSF, GS-53, EN1276, AOAC 960.09\*

Hard Surfaces: ASTM E1153, EN 13697, EN 14476 & AOAC 960.09\*

## FEATURES

**Appearance:** Colorless liquid

**Fragrance:** No added fragrance

**pH:** 3.0

**Density:** 1.00 g/cm<sup>3</sup>

**Solubility:** Total in water

## COMPOSITION

Water (7732-18-5) CAS-No.: 7732-18-5 % ≥ 99.9995

Ozone generated from oxygen (active substance [biocide])  
CAS-No.: (10028-15-6) % < 0.0005

## SPECIFICATIONS

Model Number	LQFC225 (NA) LQFC275 (Int'l)
Dimensions	22 1/4" x 18 1/4" x 10" (57 x 47 x 25 cm)
Net Weight	25 lbs. (11.3 kg)
Flow Rate	Up to 11.5 lpm
O <sub>3</sub> Concentration	Up to 1.7 ppm (0.5 and 1.2 mg/liter)
Power	Standard 110 V & 220V   110 watts
Water Temperature	4-40 °C
Water Quality	Clean, TDS 60-200 ppm
Wi-Fi Network	2.4 GHz
Backflow	Built-in mechanical backflow prevention
Automatic Shut Off	30 minutes
Cartridge	SAO-4 SAO-24
Model Number	LCA114K-FB LCA118K-FB
Disinfecting	4 Hours 24 Hours
Cleaning	3 Days 6 Days
Cartridge Life	5,000 Liters 3,000 Liters
Dimensions	19 1/4" x 7 1/4" x 8 1/4" (49 x 18 x 21 cm) 19 1/4" x 7 1/4" x 8 1/4" (49 x 18 x 21 cm)
Weight	16.5 lbs. (7.5 kg) 16.5 lbs. (7.5 kg)

## PACKAGING

- ✓ All items packed in kraft boxes to minimize plastic waste
- ✓ All kraft boxes made of 100% post-consumer recycled materials



### Recommended Accessories

SPLCA12K: SAO® Spray Bottle

SPSECONDLAB100: SAO® Secondary Label

SD-230: Reed ORP Meter

ORP-14: Reed ORP Probe

481234-TET: SenSafe Ozone Check Test Strips

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**tersano**<sup>®</sup>

terra [earth/land] sano [healthy]

### Cleaning for the Planet

Tersano is changing the way the world cleans by replacing harmful cleaning chemicals with

#### Stabilized Aqueous Ozone (SAO)<sup>®</sup>

Using innovation and technology, Tersano turns ordinary tap water and electricity into SAO: an alternative to traditional chemical cleaners, sanitizers, and deodorizers. SAO solution is created on-site and on demand, eliminating the need to purchase, transport, distribute, store and re-stock multiple products.

Completely safe (SDS 0-0-0), SAO is scent-free and biodegradable (reverts to oxygen and water), posing zero risk of harm to people and planet and offering dramatic carbon footprint reduction.



### SAO Environmental Benefits

#### Our Impact

##### Reduce CO<sub>2</sub> Emissions



##### Water Savings



##### Reduce Waste



**100%**

recyclable cardboard used in producing, shipping, and operating SAO system

**100%**

biodegradable; reverts to oxygen and water, thereby reducing treatment costs to conserve water

**83%**

less plastic used in producing, shipping, and operating our SAO system

**673,549,382\***

liters of harsh chemicals kept out of the environment and counting!\*

**0%**

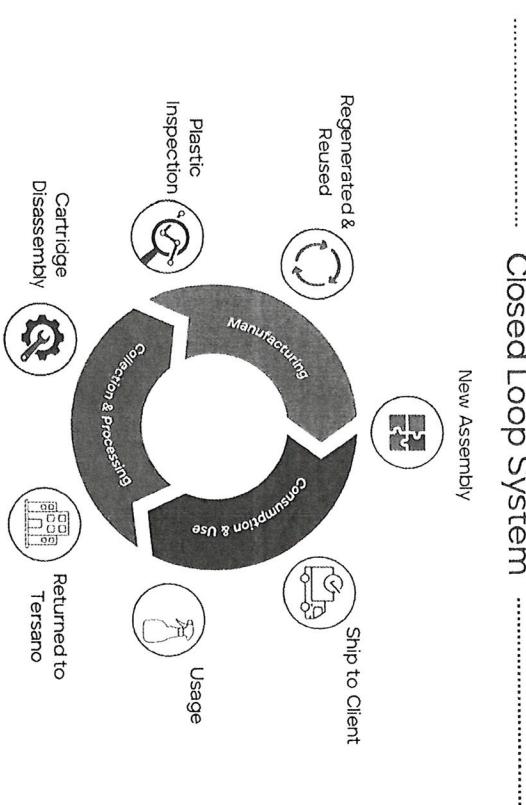
toxic chemicals into the environment (SDS 0-0-0)

**+170**

countries global distribution

Leading by example within our own operations, Tersano is committed to helping the world clean, work and live more sustainably.

### Certified Sustainable



[www.tersano.com](http://www.tersano.com)

**Changing The Way The World Cleans**





## SECTION 1: An Overview of ATP Monitoring Systems

A key feature of ATP monitoring systems is the use of bioluminescence technology to identify and measure **adenosine triphosphate**, commonly known as **ATP**.

### 1.1 What is ATP?

ATP is an energy molecule found in all plant, animal and microbial cells. It fuels metabolic processes such as cellular reproduction, muscle contraction, plant photosynthesis, respiration in fungi, and fermentation in yeast. All organic matter (living or once-living) contains ATP, including food, bacteria, mold and other microorganisms. The detection of ATP on a surface or in water therefore indicates the presence of biological matter that may not otherwise be visible to the eye. In industries where plant hygiene control or cleanliness is crucial, ATP testing is an excellent tool for detecting and measuring biological matter that should not be present after cleaning.

### 1.2 Measuring ATP with bioluminescence technology

Hygiena ATP testing devices contain a natural enzyme found in fireflies. This enzyme, called luciferase, produces a simple bioluminescence (light-producing) reaction when it comes into contact with ATP. Using bioluminescence technology, the SystemSURE Plus and EnSURE luminometers can measure extremely low levels of ATP collected with testing devices. Measuring the amount of bioluminescence from an ATP reaction provides an excellent indication of surface cleanliness or water quality because the quantity of light generated by the reaction is directly proportional to the amount of ATP present in the sample. The bioluminescence reaction is immediate so results can be processed at the testing site in seconds. Results are expressed numerically on the luminometer screen in Relative Light Units (**RLU**).



# RLU CHART

0-10

SURGICALLY STERILE

10-30

CONSIDERED FOOD SAFE

31-100

CONSIDERED CLEAN

101-200

CAUTION

201-500

CONTAMINATED

501-1000

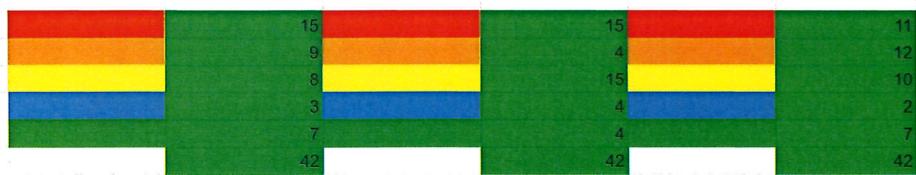
HIGH RISK OF INFECTION

1000+

EXTREME RISK OF INFECTION

1000+

			Test One		Test Two		Test Three
		Date and Time		Date and Time		Date and Time	
General Education Classroom	Door Handle	10/15 @ 12:30 PM	3047	11/07 @ 12:00 PM	1951	12/2@ 11:30 AM	623
	Desk	10/15 @ 12:30 PM	508	11/07 @ 12:00 PM	571	12/2@ 11:30 AM	432
	Flat Surface	10/15 @ 12:30 PM	1116	11/07 @ 12:00 PM	226	12/2@ 11:30 AM	785
	Sink	10/15 @ 12:30 PM	5545	11/07 @ 12:00 PM	6468	12/2@ 11:30 AM	47
	Soap Dispenser	10/15 @ 12:30 PM	449	11/06 @ 12:00 PM	374	12/2@ 11:30 AM	11
	Desk	10/15 @ 12:30 PM	1191	11/06 @ 12:00 PM	367	12/2@ 11:30 AM	682
General Education Classroom	Flat Surface	10/15 @ 12:30 PM	457	11/06 @ 12:00 PM	3504	12/2@ 11:30 AM	2688
	Table	10/15 @ 12:30 PM	161	11/06 @ 12:00 PM	201	12/2@ 11:30 AM	974
Media Center	Teacher Desk	10/15 @ 12:30 PM	494	11/06 @ 12:00 PM	235	12/2@ 11:30 AM	992
	Door Handles	10/15 @ 12:30 PM	646	11/06 @ 12:00 PM	150	12/2@ 11:30 AM	301
	Flat Surface	10/15 @ 12:30 PM	1045	11/06 @ 12:00 PM	496	12/2@ 11:30 AM	1006
	Door Handle	10/15 @ 12:30 PM	1686	11/07 @ 12:00 PM	1639	12/2@ 11:30 AM	868
	Desk	10/15 @ 12:30 PM	1114	11/07 @ 12:00 PM	1182	12/2@ 11:30 AM	763
	Flat Surface	10/15 @ 12:30 PM	285	11/07 @ 12:00 PM	1443	12/2@ 11:30 AM	253
General Education Classroom	Door Handle	10/15 @ 12:30 PM	1000	11/06 @ 12:00 PM	2451	12/2@ 11:30 AM	1529
	Desk	10/15 @ 12:30 PM	774	11/06 @ 12:00 PM	1101	12/2@ 11:30 AM	340
	Flat Surface	10/15 @ 12:30 PM	1174	11/06 @ 12:00 PM	1699	12/2@ 11:30 AM	1380
General Education Classroom	Door Handle	10/15 @ 12:30 PM	921	11/07 @ 12:00 PM	1045	12/2@ 11:30 AM	1101
	Table	10/15 @ 12:30 PM	847	11/07 @ 12:00 PM	170	12/2@ 11:30 AM	356
Art Room	Flat Surface	10/15 @ 12:30 PM	574	11/07 @ 12:00 PM	399	12/2@ 11:30 AM	18
	Sink	10/15 @ 12:30 PM	289	11/07 @ 12:00 PM	279	12/2@ 11:30 AM	1112
	Table	10/15 @ 12:30 PM	1456	11/06 @ 12:00 PM	570	12/2@ 11:30 AM	1213
Cafeteria	Door handle	10/15 @ 12:30 PM	630	11/06 @ 12:00 PM	410	12/2@ 11:30 AM	275
	Serving areas	10/15 @ 12:30 PM	1606	11/06 @ 12:00 PM	873	12/2@ 11:30 AM	1253
	Prep Area	10/14 @ 2:00 PM	876	11/06 @ 12:00 PM	426	12/2@ 11:30 AM	530
Kitchen	Serving Area	10/14 @ 2:00 PM	278	11/06 @ 12:00 PM	1419	12/2@ 11:30 AM	750
	Tray Return	10/14 @ 2:00 PM	335	11/06 @ 12:00 PM	28	12/2@ 11:30 AM	222
	Flat Surface	10/14 @ 2:00 PM	1146	11/06 @ 12:00 PM	1393	12/2@ 11:30 AM	1287
Single Stall Bathroom	Door Handle	10/14 @ 2:00 PM	144	11/06 @ 12:00 PM	303	12/2@ 11:30 AM	243
	Sink	10/14 @ 2:00 PM	6693	11/06 @ 12:00 PM	1638	12/2@ 11:30 AM	517
	Toilet	10/14 @ 2:00 PM	0	11/06 @ 12:00 PM	236	12/2@ 11:30 AM	290
Gang Bathroom	Sink	10/14 @ 2:00 PM	7025	11/06 @ 12:00 PM	273	12/2@ 11:30 AM	247
	Toilet	10/14 @ 2:00 PM	50	11/06 @ 12:00 PM	184	12/2@ 11:30 AM	22
	Urinal	10/14 @ 2:00 PM	74	11/06 @ 12:00 PM	92	12/2@ 11:30 AM	15
Gang Bathroom	Flat Surface	10/14 @ 2:00 PM	6	11/06 @ 12:00 PM	18	12/2@ 11:30 AM	27
	Sink	10/14 @ 2:00 PM	4488	11/06 @ 12:00 PM	273	12/2@ 11:30 AM	1046
	Toilet	10/14 @ 2:00 PM	25	11/06 @ 12:00 PM	321	12/2@ 11:30 AM	107
Nurses Office	Flat Surface	10/14 @ 2:00 PM	63	11/06 @ 12:00 PM	159	12/2@ 11:30 AM	64
	Cot	10/14 @ 2:00 PM	197	11/06 @ 12:00 PM	75	12/2@ 11:30 AM	145
	Sink	10/14 @ 2:00 PM	7168	11/06 @ 12:00 PM	8039	12/2@ 11:30 AM	2957
West Exterior Door	Flat Surface	10/14 @ 2:00 PM	221	11/06 @ 12:00 PM	571	12/2@ 11:30 AM	898
	Door Handle	11/15 @ 12:30 PM	6669	11/06 @ 12:00 PM	1050	12/2@ 11:30 AM	765



Small Control test	Start test	Spray and imediately wipe off	Mist let sit for 10 minutes then wipe down
Flat Surface in the Kitchen area. This is a stainless steel surface area	1393	208	104

