

ACID SANITIZER

Oxonia Active LS™

EPA-registered, peroxyacetic acid, antimicrobial agent with broad antimicrobial activity for use in a number of disinfecting applications.



Why Oxonia Active LS?

PROMOTES QUALITY ASSURANCE

- Disinfectant for the Life Sciences industry including Pharmaceutical and Cosmetic surfaces, Oxonia Active LS effectively kills *Staphylococcus aureus* (ATCC 6538), *Burkholderia cepacia* (ATCC 25416), and *Salmonella enterica* (ATCC 10708)
- Penetrates biofilms, killing the bacteria *Pseudomonas aeruginosa* and *Staphylococcus aureus* living there
- pH range tolerant - effective sanitizing activity at acidic to neutral pH.

- Helps protect processing equipment investment - use solutions non-corrosive to 304, 316, stainless steel and aluminum surfaces when used at concentrations listed on the product label
- Compatible with most plastic and rubber materials used in processing operations when used according to label directions for use
- Effective against environmental microorganisms that can adversely affect shelf-life. See directions for use for list of organisms.

SAVES TIME AND MONEY

- Non-foaming formulation minimizes CIP cycle time and improves CIP efficiency.

- When used according to label directions for use, provides acidified rinse and sanitizer in one step - no post-rinse required.

ENVIRONMENTAL IMPLICATIONS

- Low phosphorous formulation minimizes phosphate-related effluent fees.
- Active ingredients rapidly break down after use into water, oxygen and acetic acid.

DOCUMENTATION PACKAGE

- Technical data sheet
- Safety data sheet
- Toxicological data sheet
- Certificate of Analysis

SUBJECT TO INCOMING GOODS CONTROL

Appearance	Colorless	Density	1.12 kg/L - 9.33 LB/GAL
pH	1% Solution pH 2.5		

PROPERTIES

Concentrate

Storage Stability	14°F - 104°F / -10°C - 40°C	Frost Resistance	Freeze/Thaw Stable
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Application Solution

pH	pH 1% Solution 2.5 / pH 100% Solution <1	Foam Behaviour	No to low foam
Conductivity	--		

Material Compatibility

Metals	Use solutions non-corrosive to 304, 316 stainless steel and aluminum surfaces when used at concentrations listed on the product label.	Plastics	Compatible with most plastic and rubber materials used in processing operations.
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APPLICATION

Mode of Application

Due to EPA claims, please consult product label for all approved directions for use. Consult your Ecolab Representative for specific use instructions and recommended dispensing equipment. For cautionary and first aid information, consult the Safety Data Sheet (SDS) or product label.

MONITORING

Titration

Test Kit 322 - Oxidizer Test Kit

ECOLOGICAL EVALUATION

Evaluation

- ▲ OMRI Certified
- ▲ Excellently biodegradable
- ▲ The antimicrobial active substances are already decomposed during application and in sewage
- ▲ Chlorine-free, no production of chlororganic compounds

P-content

Formula ingredients contain not more than 0.3% Phosphorus, at the concentration. Please refer to the label for use concentrations.

SAFETY

The relevant Hazard identifications of Oxonia Active LS are given in the Safety Data Sheet available at safetydata.ecolab.com. If any questions arise in this context please contact your Ecolab representative.

PRODUCT ORDERING INFORMATION

UNIT OF SALE	LANGUAGES	ORDER CODE
4.5 GAL	EN, ES, FR	6600487
50 GAL	EN, ES, FR	6600386
300 GAL	EN, ES, FR	6600488



Oxonia Active LS™

STERILANT AND DISINFECTANT WITH SPORICIDAL ACTIVITY FOR THE COSMETIC, DIETARY SUPPLEMENT, AND PHARMACEUTICAL INDUSTRIES
KEEP OUT OF REACH OF CHILDREN
DANGER

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds, fish, and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

DIRECTIONS FOR USE
 It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

SANITIZATION
 Oxonia Active LS acid sanitizer is recommended for use on hard, non-porous, pre-cleaned surfaces such as equipment, pipelines, tanks, vats, fillers, evaporators, pasteurizers, milling equipment, granulators, aseptic equipment and associated equipment in dietary supplement manufacturing, cosmetics manufacturing, pharmaceutical manufacturing and food processing plants. This product is effective as a sanitizer when solution is prepared in water of up to 500 ppm hardness as CaCO₃.

NOTE: FOR MECHANICAL OPERATIONS prepared use solution may not be reused for sanitizing but may be reused for other purposes such as cleaning.
 FOR MANUAL OPERATIONS fresh sanitizing solutions must be prepared at least daily or more often if the solution becomes diluted or soiled.

SANITIZING FOOD CONTACT SURFACES
 Prior to sanitizing, remove gross particles, and then wash with a detergent solution, followed by a potable water rinse. Sanitize hard, non-porous surfaces with a concentration of 1.0 - 1.4 fl. oz. Oxonia Active LS concentrate per 4 gallons of water (0.20 - 0.28% v/v concentration). At this dilution Oxonia Active LS is effective against *Staphylococcus aureus* (ATCC 6538), *Escherichia coli* (ATCC 11229), *Escherichia coli* O157:H7 (ATCC 43895), *Listeria monocytogenes* (ATCC 7644), *Salmonella typhimurium* (ATCC 13311), *Pseudomonas aeruginosa* (ATCC 15442) and *Vibrio cholerae* (ATCC 25873). It is also effective against *Saccharomyces cerevisiae* (ATCC 834), *Pediococcus damnosus* (ATCC 25248) and *Lactobacillus malefermentans* (ATCC 11307). Use immersion, coarse spray or circulation techniques as appropriate to the equipment. All surfaces must be exposed to the sanitizing solution for a period of not less than 1 minute unless a longer time is specified by the governing sanitary code. Drain thoroughly and allow to air dry. No rinse necessary.

ELEVATED TEMPERATURE SANITIZING FOR FOOD CONTACT SURFACES
 For sanitization of hard, non-porous surfaces of equipment in food and dietary supplements processing plants, clean and rinse equipment thoroughly. At a temperature of 49°C (120°F), Oxonia Active LS is an effective sanitizer for hard, non-porous food contact surfaces at a concentration of 0.20% - 0.28% v/v (1.0 - 1.4 fl. oz. Oxonia Active LS to 4 gallons water) against *Staphylococcus aureus* (ATCC 6538) and *Escherichia coli* (ATCC 11229). All surfaces must be exposed to the sanitizing solution for a period of not less than 1 minute. Allow equipment to drain thoroughly. No rinse necessary.

FINAL CONTAINER SANITIZING
 Oxonia Active LS may be used as a final sanitizing step for returnable and non-returnable bottles, containers (e.g. glass or PET), and/or closures at a dilution rate of 1.0-1.4 fl. oz. Oxonia Active LS per 4 gallons of water (2.0-2.8 mL/L or 0.20%-0.28% v/v). At this dilution, Oxonia Active LS is effective against

Staphylococcus aureus (ATCC 6538), *Escherichia coli* (ATCC 11229), *Escherichia coli* O157:H7 (ATCC 43895), *Listeria monocytogenes* (ATCC 7644), *Salmonella typhimurium* (ATCC 13311), *Pseudomonas aeruginosa* (ATCC 15442) and *Vibrio cholerae* (ATCC 25873). All surfaces must be exposed to the sanitizing solution for a period of not less than 1 minute. Drain thoroughly and allow to air dry. No rinse necessary.

SANITIZE PRE-CLEANED OR NEW RETURNABLE OR NON-RETURNABLE CONTAINERS

To sanitize pre-cleaned or new returnable or non-returnable containers and/or closures for processing, apply Oxonia Active LS at a concentration of 1.0% - 4.0% (10 - 40 fl. oz. per 8 gallons of water) at a temperature of 40 - 60°C (104 - 140°F) for at least 7 seconds. At these conditions, Oxonia Active LS is effective against *Staphylococcus aureus* (ATCC 6538), *Escherichia coli* (ATCC 11229), *Salmonella typhimurium* (ATCC 13311), *Pediococcus damnosus* (ATCC 25248), *Lactobacillus malefermentans* (ATCC 11305) and *Saccharomyces cerevisiae* (ATCC 834). After thorough draining, rinse interior container surfaces with a potable water rinse.

SANITIZING NON-FOOD CONTACT SURFACES
 Prior to sanitizing, remove gross soil particles and then wash with a detergent solution followed by a potable water rinse. Sanitize hard, non-porous, non-food contact surfaces such as equipment, blenders, pipelines, tanks, vats, fillers, evaporators, pasteurizers, aseptic equipment, associated equipment, floors, walls, tables, chairs, benches, drains, troughs, and drip pans with 1.0-2.5 fl. oz. Oxonia Active LS per 8 gal water (0.1-0.3% v/v). At this concentration the product is effective against *Staphylococcus aureus* (ATCC 6538), *Klebsiella aerogenes* (formerly known as *Enterobacter aerogenes* (ATCC 13048), *Escherichia coli* (ATCC 11229), *Listeria monocytogenes* (ATCC 7644), *Salmonella typhimurium* (ATCC 13311), *Pseudomonas aeruginosa* (ATCC 15442), *Burkholderia cepacia* (ATCC 25416), and *Saccharomyces cerevisiae* (ATCC 834). It is also effective against *Pediococcus damnosus* (ATCC 25248) and *Lactobacillus malefermentans* (ATCC 11305). All surfaces must be exposed to the sanitizing solution for a period of not less than 5 minutes. Drain thoroughly and allow to air dry. No rinse necessary.

FOAM SANITIZING NON-FOOD CONTACT SURFACES (This use not approved in the state of California)

Oxonia Active LS is an effective foam sanitizer of pre-cleaned, hard, non-porous, non-food contact surfaces such as boots, floors, walls, drains, and associated equipment. For this application, prepare a solution of 0.2% v/v (1 fl. oz. per 4 gallons water) Oxonia Active LS and 0.13% v/v (0.7 fl. oz. per 4 gallons water) Liquid K. For example, in four gallons of water, add 1 fl. oz. of Oxonia Active LS and 0.7 fl. oz. of Liquid K. Liquid K is the only approved foam generator. Apply solution as a foam using recommended equipment such as a Super Foamer. Wet surfaces thoroughly. At this concentration, the product is effective against *Staphylococcus aureus* (ATCC 6538), *Enterobacter aerogenes* (ATCC 13048) and *Listeria monocytogenes* (ATCC 7644). Surfaces must be exposed to the sanitizing foam for a period of not less than 5 minutes. No rinse necessary. Contact your Ecolab representative for information on Liquid K and a recommended foamer.

SANITIZING NON-FOOD CONTACT PACKAGING EQUIPMENT

Prior to use of this product, remove gross soil particles from surfaces. Wash with a recommended detergent solution and rinse thoroughly with potable water. For sanitization against the spoilage organisms *Pediococcus damnosus* (ATCC 25248), *Lactobacillus malefermentans* (ATCC 11305) and *Saccharomyces cerevisiae* (ATCC 834), apply 0.5 - 4.0% (5 - 40 fl. oz. per 8 gallons of water) of Oxonia Active LS to hard, non-porous surfaces at a temperature of 25 - 45°C (77 - 113°F) and allow to remain wet for at least 5 minutes. Allow surfaces to drain thoroughly before operations are resumed.

ANTIMICROBIAL

ANTIMICROBIAL TREATMENT OF WATER FILTERS
 To reduce the number of the spoilage organisms *Pediococcus damnosus* (ATCC 25248), *Lactobacillus malefermentans* (ATCC 11305) and *Saccharomyces cerevisiae* (ATCC 834). Clean the water filters with a detergent solution followed by a potable water rinse. Apply Oxonia Active LS as a 0.5 - 2.0% (5 - 20 fl. oz. per 8 gallons of water) solution at 25°C (77°F) for a minimum contact time of 5 minutes. After thorough draining, rinse filters with a potable water rinse. Consult filter manufacturer for filter compatibility guidelines. Conduct filter treatment while the process is not in operation.

ANTIMICROBIAL TREATMENT OF REVERSE OSMOSIS WATER MEMBRANES
 To reduce the number of the spoilage organisms *Pediococcus damnosus* (ATCC 25248), *Lactobacillus malefermentans* (ATCC 11305) and *Saccharomyces cerevisiae* (ATCC 834). Clean the RO system with a detergent solution followed by a potable water rinse. Apply Oxonia Active LS as a 0.1 - 0.2% (1 - 2.1 fl. oz. per 8

gallons of water) use solution at 24°C (75°F) for a minimum contact time of 5 minutes. After treatment with Oxonia Active LS use solution, rinse membranes thoroughly with a disinfected water rinse free of pathogenic bacteria.¹ Consult membrane manufacturer for membrane compatibility guidelines. Conduct membrane treatment while the membrane system is off-line.

ANTIMICROBIAL TREATMENT OF PROCESSING MEMBRANES

To reduce the number of the spoilage organisms *Pediococcus damnosus* (ATCC 25248), *Lactobacillus malefermentans* (ATCC 11305), *Saccharomyces cerevisiae* (ATCC 834), *Sphingomonas paucimobilis* (ATCC 10829), and *Aureobacterium esteraromaticum* (ATCC 958).

Ultrafiltration and Microfiltration Membranes: Use 2.0 - 2.5 fl. oz. of Oxonia Active LS per 8 gallons of water (2,000 - 2,500 ppm v/v) for a minimum contact time of 5 minutes. For extreme fouling situations, use up to 10.2 fl. oz. of Oxonia Active LS per 8 gallons of water (10,000 ppm v/v). Conduct membrane treatment while processing is not in operation. After treatment with Oxonia Active LS use solution, rinse membranes thoroughly with a disinfected water rinse free of pathogenic bacteria.¹ Consult membrane manufacturer for membrane compatibility guidelines.

Reverse Osmosis and Nanofiltration Membranes: Use 0.9 - 1.1 fl. oz. of Oxonia Active LS per 8 gallons of water (900 - 1,100 ppm v/v) for a minimum contact time of 5 minutes. For extreme fouling situations, use up to 10.2 fl. oz. of Oxonia Active LS per 8 gallons of water (10,000 ppm v/v). Conduct membrane treatment while processing is not in operation. After treatment with Oxonia Active LS use solution, rinse membranes thoroughly with a disinfected water rinse free of pathogenic bacteria.¹ Consult membrane manufacturer for membrane compatibility guidelines.

¹A disinfected water rinse free of pathogenic bacteria is equivalent to a water rinse using water disinfected by ozone, ultraviolet radiation, chlorine dioxide, filtration, chlorine or chlorine compounds.

DISINFECTION

DISINFECTION OF PHARMACEUTICAL AND COSMETIC SURFACES Oxonia Active LS is recommended for use on hard, non-porous, environmental surfaces such as floors, walls and processing equipment in pharmaceutical and cosmetic processing facilities. This product is effective against *Staphylococcus aureus* (ATCC 6538), *Burkholderia cepacia*[†] (ATCC 25416) and *Salmonella enterica* (ATCC 10708) at 0.4% - 1.0% (2 fl. oz. / 4 gallons to 5 fl. oz. / 4 gallons of water) in 5% blood serum and dried soap film residue. For heavily soiled areas a pre-cleaning step is required. Rinse all surfaces thoroughly with the disinfecting solution and maintain a visibly wet contact time of at least 10 minutes. Product contact surfaces must be rinsed with water of suitable quality. Prepare fresh solution for each use.

[†]Not tested in the presence of soap film residue.

COMBINATION GENERAL DISINFECTION AND CLEANING

A pre-cleaning step is required for visibly soiled areas. Apply diluted solution with mop, cloth, sponge, brush, scrubber, or coarse spray device or by soaking so as to wet all surfaces thoroughly. Allow to remain visibly wet for required contact time, and then remove solution and entrapped soil with a clean wet mop, cloth, or wet vacuum pickup. Prepare a fresh solution daily or when it becomes soiled or diluted.

When diluted at 0.4% - 1.0% (2 fl. oz. / 4 gallons to 5 fl. oz. / 4 gallons) in water in the presence of 5% blood serum and dried soap film residue with a 10 minute contact time, Oxonia Active LS is effective against:

- Burkholderia cepacia*[†] (ATCC 25416)
- Staphylococcus aureus* (ATCC 6538)
- Pseudomonas aeruginosa* (ATCC 15442)
- Salmonella enterica* (ATCC 10708)
- Salmonella enteritidis* (ATCC 13076)
- Salmonella typhimurium* (ATCC 13311)
- Proteus vulgaris* (ATCC 13315)
- Streptococcus pyogenes* (ATCC 19615)
- Histoplasma capsulatum*[†]

[†]Not tested in the presence of soap film residue.

VIRUCIDAL*

When diluted at 0.4% - 1.0% (2 fl. oz. / 4 gallons to 5 fl. oz. / 4 gallons of water) Oxonia Active LS is effective against the following when used at 20°C (68°F) with a 10 minute contact time in the presence of organic soil. Apply as directed under disinfection.

- *Influenza B/Taiwan/2/62 Virus
- *Influenza A Virus (H1N1)
- *Influenza A Virus (H3N2)
- *Influenza A Virus (H10N7)

BIOFILM DISINFECTION

Disinfection of Biofilm on Hard, Non-Porous Surfaces: When applied to pre-cleaned hard, non-porous surfaces conducive to biofilm formation, Oxonia Active LS is effective as a non-food contact surface biofilm disinfectant against *Pseudomonas aeruginosa* (ATCC 15442) and *Staphylococcus aureus* (ATCC 6538). Use a cleaning solution suitable to remove gross particles and rinse with potable water. Disinfect with a concentration of 3 fl. oz. of product per gallon of water. Apply use solution using a cloth, mop, sponge, coarse sprayer, or by immersion. All surfaces must be exposed to the solution for a period of not less than 10 minutes at 30°C. Drain thoroughly and allow to air dry. No rinse necessary.

DISINFECTANT WITH SPORICIDAL ACTIVITY

***Clostridioides difficile* (formerly known as *Clostridium difficile*)**

When applied to pre-cleaned surfaces, this product kills and/or inactivates spores of *Clostridioides difficile* (formerly known as *Clostridium difficile*) on hard, non-porous surfaces. This product is effective against *C. difficile* endospores when diluted at 3 fl. oz. per gallon after a 5 minute contact time. Treated surface must remain visibly wet for entire contact time.

SPECIAL INSTRUCTIONS FOR CLEANING PRIOR TO DISINFECTION AGAINST *Clostridioides difficile* SPORES

Personal Protection: Wear appropriate barrier protection such as gloves, gowns, masks or eye covering.

Cleaning Procedure: Fecal matter/waste must be thoroughly cleaned from surfaces/objects before disinfection by application with a clean cloth, mop, and/or sponge saturated with the disinfectant product. This cleaning may be accomplished with any cleaning solution, including this product. Cleaning is to include vigorous wiping and/or scrubbing, until all visible soil is removed. Special attention is needed for high-touch surfaces. Surfaces in patient rooms are to be cleaned in an appropriate manner, such as from right to left or left to right, on horizontal surfaces, and top to bottom, on vertical surfaces, to minimize spreading of the spores. Restrooms are to be cleaned last. Do not reuse soiled cloths.

Infectious Materials Disposal: Materials used in the cleaning process that may contain feces/wastes are to be disposed of immediately in accordance with local regulations for infectious materials disposal.

FUNGICIDAL

This product is a one-step fungicide when diluted at 3 fl. oz. per gallon of water. This product kills *Candida albicans* after a contact time of 3 minutes, and *Trichophyton interdigitale* (formerly *Trichophyton mentagrophytes*) (the athlete's foot fungus) after a contact time of 10 minutes. Treated surface must remain visibly wet for entire contact time. Oxonia Active LS can be used in areas such as locker rooms, dressing rooms, shower and bath areas and exercise facilities.

STERILIZATION

STERILIZATION OF MANUFACTURING, FILLING, AND PACKAGING EQUIPMENT IN ASEPTIC PROCESSES

Prior to use of this product, remove gross soil particles from processing surfaces, then wash with a recommended detergent solution, followed by a thorough potable water rinse. Prepare a sterilizing solution by diluting 6.4 fl. oz. Oxonia Active LS concentrate per each gallon of water (50 mL/liter) (5.0% v/v). Circulate, coarse spray, or flood the sterilizing solution through the system. All surfaces must be exposed to the sterilizing solution for a minimum exposure time based on the product solution temperature. The following time and temperature relationships are required:

Oxonia Active LS Concentration	Temperature	Time
5%	68°F (20°C)	6 hours
5%	122°F (50°C)	20 minutes
5%	176°F (80°C)	5 minutes

Allow surfaces to drain thoroughly prior to any food or product contact. Rinse food or product contact surfaces with sterile water. This product is an effective sporicide against *Bacillus subtilis* (ATCC 19659) and *Clostridium sporogenes* (ATCC 3584) when used per the label directions.

NOTE: This product in its use solutions is compatible with stainless steel and aluminum surfaces. If product is intended to be used on any other surface, it is recommended that you apply product to a smaller test area to determine compatibility before proceeding with its use.

EPA Reg. No. 1677-129
EPA Est. 60156-IL-1 (SI), 1677-IL-2 (J), 1677-TX-1 (D), 1677-GA-1 (M), 1677-MN-1 (P), 70271-CA-2 (A), 1677-CA-2 (R), 1677-WV-1 (V).
Superscript refers to first letter of date code.

This product may be patented:
www.ecolab.com/patents

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