

	Product Description	Mechanism of Action	Germicidal Efficacy	Contact Time	Gaps in Activity Spectrum	Health and Safety Profile	Environmental Profile	Cleaning Efficacy	Material Compatibility*
Accelerated Hydrogen Peroxide	<p>Synergistic and patented blend of Hydrogen Peroxide and Anionic Surfactants. <i>All ingredients appear on the EPA GRAS (Generally Regarded As Safe) listing and/or the EPA Preferred Inerts Listing.</i></p> 	<p>The accelerated activity of AHP is the outcome of a unique synergy between Hydrogen Peroxide and a number of other ingredients including surfactants and sequestering agents. This synergy greatly increases the kinetics of the action against pathogenic organisms and reduces the time required to render the solution cidal.</p> <p>Even though the exact mechanism of action for AHP is unknown it is believed that AHP acts by:</p> <ol style="list-style-type: none"> 1. Disrupting the cellular membrane permeability, inhibiting the enzymatic activities, and denaturing cellular proteins. 2. The reaction of the superoxide ion with H₂O₂ forms hydroxyl radical. The Hydroxyl radical, being highly reactive attacks membrane lipids, DNA and other essential cell components. 3. Sequestration of bivalent cations resulting in subsequent disruption of cellular structure and functions. 4. Alteration of the proton motive force responsible for species transport across the cellular membrane. <p>It is believed that oxidizing actives will not allow for resistance development when targeting organisms.</p>	<p>Gram Positive and Gram Negative Vegetative Bacteria (0.5 % w/w): <i>Pseudomonas aureginosa ATCC 15442</i> <i>Staphylococcus aureus ATCC 6538</i> <i>Salmonella choleraesuis ATCC 10708</i> <i>Staphylococcus aureus MSRA</i> <i>Enterococcus faecalis VRE ATCC 51575</i> <i>Escherichia coli</i> <i>Acinetobacter baumannii</i></p> <p>Viruses -Enveloped and Non-Enveloped (0.5 % w/w): <i>Polio Virus Sabin Strain Type 1 ATCCVR 192</i> <i>Human immunodeficiency Virus Type 1</i> <i>Human Rhinovirus Type 14</i> <i>Human Rotavirus</i> <i>Feline Calicivirus(Noravirus surrogate or Norwalk-Like Viruses)</i></p> <p>Fungi: <input type="checkbox"/> AHP (7 % w/w) <input type="checkbox"/> AHP-TB (2%) <input type="checkbox"/> AHP-TB (0.5 % w/w) ATCC 9533 <i>Trichophyton mentagrophyte</i></p> <p>Mycobacteria: <input type="checkbox"/> AHP (7 % w/w) <input type="checkbox"/> AHP (2%) <input type="checkbox"/> AHP-TB (0.5 %) ATCC 15755 <i>Mycobacterium terrae</i></p> <p>Spores (7 % w/w): <i>Bacillus subtilis ATCC 19659</i> <i>Clostridium sporogenes ATCC 7955</i></p> <p>Reference: Centre for Research on Environmental Microbiology, CREM, University of Ottawa.</p>	<p>Sanitizer 99.999% 5-log (30 seconds) Broad-Spectrum approval, Bacteria including MRSA, VRE</p> <p>Disinfection: (1-5 minutes) Broad Spectrum Bactericidal Approval 99.9999% 6-log₁₀ Reduction: Accel TB:</p> <p>General Virucide Claim (1-5 minutes) 99.99% 4-log₁₀ Reduction (based on proven effectiveness against Polio Virus Sabine Strain as selected surrogate by Health Canada):</p> <p>Fungicidal (3-5 Minutes) 99.999% 5-log₁₀ Reduction:</p> <p>High Level Disinfection: (1-20 min)</p> <p>Mycobactericidal: 99.9999% 6-log₁₀ Red.on Instruments 99.99% 4-log₁₀ Red. on Surfaces</p> <p>Sterilization:</p> <p>Sporicidal 99.9999% 6-log₁₀ Reduction Instruments: 20 minutes Surfaces: 10 minutes</p> <p><i>Note:</i> <i>These contact times have been established by microbial testing as required by the Disinfectant Drug Guidelines - 1999 Edition, Health Canada</i></p>	None	<p>0.5 % AHP</p> <p>Non Irritant to Skin according to OECD 404* (Nucro-Technics Inc, 1999)</p> <p>Non Irritant to Eyes according to OECD 405 at use dilution (Nucro-Technics Inc, 1999)</p> <p>Acute Oral Toxicology, OECD 420, indicated LD₅₀ > 2.0g/Kg (Nucro-Technics Inc. , 1999)</p> <p>VOC –Free (free from Volatile Organic Compounds), studies on file Ortech Inc., below detection limits.</p> <p>No-Fragrance, No-Dyes</p> <p>0.5% AHP - TB</p> <p>Non-irritating to Skin according to OECD 404* (Nucro-Technics Inc, 2003)</p> <p>Non-irritating to Eyes by OECD 405 * (Nucro-Technics Inc, 2003)</p> <p>Acute Oral Toxicology, OECD 420, indicated LD₅₀ > 2.0g/Kg (Nucro-Technics Inc. , 2002)</p> <p>Category IV-The Environmental Protection Agency (EPA), does not require any precautionary statement on the label.</p>	<p>0.5 % AHP</p> <p>Biodegradable according to the OECD 302 B (Inherent Biodegradability Test)</p> <p>Products are not manufactured using APE (Alkyl Phenyl Ethoxylates) or NPEs (Nonylphenol Ethoxylates) which have been worldwide classified as "Endocrine Disrupting Chemicals": <i>Canadian Environmental Protection Act (CEPA) - Priority Substance List PLS2</i></p> <p>Low Toxicity Profile to Aquatic Species: Rainbow Trout Toxicity 96h LC₅₀ = 1.77 ml/l Daphnia Magna Toxicity 48h EC₅₀ = 0.37ml/l</p>	<p>0.5 % AHP</p> <p>Excellent: 86.5% Cleaning Efficiency according to the Canadian General Standards Board, Standard CAN/CGSB 2.11- Method 20.3</p>	<p>Avoid prolonged exposure to: Copper, Brass, , Lead, Chrome, Nickel and other soft metals.</p>

Chlorine Compounds	<p>The types of chlorine compounds that are most frequently used are the hypochlorites (chlorine) and N-chloro compounds.</p> <p>Hypochlorites or as more commonly known “chlorine” are an aqueous solution of active chlorine compounds, consisting of a mixture of OCl⁻ (hypochlorite ion), Cl₂ (chlorine), and HOCl (hypochlorous acid). They are commercially available as inorganic salts of hypochlorite (Sodium or calcium) and are used for cleaning and disinfecting.</p> <p>Organic Chlorine compounds. N-chloro compounds, which contain the =N-Cl group also drive germicidal activity from “active chlorine”. It appears that all of these compounds hydrolyze in water in varying degree, to form hypochlorous acid. Their action is claimed to be slower than that of hypochlorites. Organic chlorine compounds are used usually in heavy industrial applications where specific organisms are targeted.</p>	<p>Hypochlorous acid is mainly responsible for the destruction of microorganisms. The dissociation of hypochlorous acid depends on pH, therefore the disinfecting efficiency of chlorine decreases with an increase in pH and vice versa.</p> <p>Bactericidal action of Chlorine-releasing agents results mainly from oxidative interaction of chlorine with SH groups of vital enzymes within the cell membrane or cell protoplasm. To a lesser extent the reversible N-chlorination of proteins of cell membrane and protoplasm might contribute to the destruction of the organism.</p>	<p>Gram Positive and Gram Negative Bacteria</p> <p>Viruses (Enveloped and non-enveloped)</p> <p>Fungi</p> <p>Mycobacteria</p> <p>Spores</p> <p>Algae</p> <p>Protozoa</p> <p><i>Reference:</i> <i>Inhibition and destruction of the microbial cell, W.B. Hugo</i></p>	<p>Vegetative bacteria: No Soil, pH=8-9, contact time 8 min*, <i>Av. Cl₂</i> 160 ppm With organic soil**, pH=8-9, contact time 8 min, <i>Av. Cl₂</i> 2000 ppm (Reference: Approval for use in hospitals)</p> <p>Viruses: No Soil, pH=8-9, contact time=0.25 min, <i>Av. Cl₂</i> 250 ppm With organic soil, pH=8-9, contact time 30 min, <i>Av. Cl₂</i> 1000-2000ppm.</p> <p>Mycobacteria: No soil, pH=8-9, contact time 10 min, <i>Av. Cl₂</i> 125 ppm With organic soil, pH=8-9, contact time 30 min, <i>Av. Cl₂</i> 1000ppm</p> <p>Bacterial Spores: No soil, pH=8-9, contact time 5 min, <i>Av. Cl₂</i> 500 ppm With organic soil, pH=8-9, contact time 10 min, <i>Av. Cl₂</i> 2000ppm</p> <p>Fungi: pH=10, contact time 30 min, <i>Av. Cl₂</i> 500 ppm</p> <p>Algae: pH=8.2, <i>Av. Cl₂</i> 2ppm</p> <p>Protozoa: pH=7, contact time 150 min, <i>Av. Cl₂</i> 0.12 ppm</p> <p>*Room Temperature **Organic soil as 1% dry weight yeast or 10% serum</p> <p><i>References: Disinfection, Sterilization, and Preservation fifth edition, Seymour S. Block</i></p> <p><i>Handbook of disinfectants and antiseptics, Joseph M. Ascenzi</i></p>	<p>Not effective against: Amoebae Bio-film (chlorine can remove Bio-film, or stop it's growth)</p> <p>Efficacy is greatly reduced by organic matter (as seen from the numbers in the previous column).</p> <p>Efficacy is greatly affected by the following factors:</p> <ol style="list-style-type: none"> 1- The pH of solution (low pH is more desirable) for germicidal efficacy 2- Temperature <p>Poor stability. Especially at:</p> <ol style="list-style-type: none"> 1- High concentrations of chlorine, 2- The presence of catalysts such as nickel or copper, 3- low pH, 4- high temperature, 5- presence of organic material <p>Poor residual activity.</p>	<p>Irritancy, and toxicity:</p> <p>Irritating to nose and throat at as low as 5 ppm. Highly irritating especially to the mucous membranes of the eyes and respiratory tract.</p> <p>Skin irritant. Destroys polyunsaturated fatty acids and Vitamin E in the body.</p> <p>Trichloromethane formed by reaction of chlorine with organic matter has very low vapor pressure. It can cause mutations and interfere with the natural controls of cell growth.</p> <p>Chlorine vapors aggravate asthma.</p>	<p>Chlorine reacts with organic precursors that are found in many source waters to produce chloroform (Trichloromethane).</p> <p>Trichloromethanes are known carcinogens.</p> <p>Besides Trichloromethane, chlorine reaction with organic precursors in source waters produces other by products including Haloacetic acids.</p> <p>Chlorine disinfection by-products also causes adverse developmental and reproductive effects, including spontaneous abortion (miscarriage).</p> <p>The EPA maximum contaminant level for total Trihalomethanes (THMs) in drinking water is 100 ppb.</p> <p>Ontario Drinking Water Standards maximum acceptable concentration for THMs is 100ug/L</p> <p>Based on the adverse health and environmental effects of chlorine by-products, EPA is in the process of revising the limit of Trihalomethanes in drinking water to 80 ppb, and the sum of Haloacetic acids to 60 ppb.</p> <p>Chlorine is highly toxic to all forms of aquatic life.</p>	<p>Poor (CAN/CGSB-2.11 Method 20.3)</p>	<p>Chlorine compounds are extremely corrosive to metals, rubbers and fabric.</p> <p>Incompatible with medical instruments.</p>
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*Always check material compatibility with manufacturer before using.