

	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/v"): <i>Pseudomonas aureginosa</i> ATCC 15442 <i>Staphylococcus aureus</i> ATCC 6538 <i>Salmonella choleraesuis</i> ATCC 10708 <i>Staphylococcus aureus</i> MSRI <i>Enterococcus faecalis</i> VRE ATCC 51575 <i>Escherichia coli</i> <i>Acinetobacter baumannii</i></p> <p>Viruses -Enveloped and Non-Enveloped (0.5 % "w/v"): <i>Polio Virus Sabin Strain Type 1</i> ATCCVR 192 <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:</p> <ul style="list-style-type: none"> • AHP (7 % "w/v") ATCC 9533 • AHP-TB (0.5 % "w/v"): ATCC 9533 <p><i>Trichophyton mentagrophytes</i></p> <p>Mycobacteria:</p> <ul style="list-style-type: none"> • AHP (7 % "w/v") ATCC 15755 • AHP-TB (0.5 % "w/v"): ATCC 15755 <p><i>Mycobacterium terrae</i></p> <p>Spores (7 % "w/v"): <i>Bacillus subtilis</i> ATCC 19659 <i>Clostridium sporogenes</i> ATCC 7955</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: (5 minutes) Broad Spectrum Bactericidal Approval 99.9999% 6-log₁₀ Reduction:</p> <p>General Virucide Claim (5 minutes) 99.99% 4-log₁₀ Reduction (based on proven effectiveness against Polio Virus Sabin Strain as selected surrogate by Health Canada):</p> <p>Fungicidal (5 Minutes) 99.9999% 5-log₁₀ Reduction:</p> <p>High Level Disinfection:</p> <p>Mycobactericidal: 99.9999% 4-log₁₀ Red.on Surfaces AHP: 20 minutes AHP-TB: 5 min</p> <p>Sterilization:</p> <p>Sporicidal 99.9999% 6-log₁₀ Reduction Instruments: 6 hours Surfaces: 30 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> <p>Reference: Centre for Research on Environmental Microbiology, CREM, University of Ottawa.</p>	<p>Depending upon composition and formulation, it may vary from 5 to 10 minutes</p>	<p>None</p>	<p>0.5 % AHP</p> <p>Non Irritant to Skin according to OECD 404* (Nuero-Technics Inc, 1999)</p> <p>Non Irritant to Eyes according to OECD 405* (Nuero-Technics Inc, 1999)</p> <p>Acute Oral Toxicology, OECD 420, indicated LD₅₀ > 2.0g/Kg (Nuero-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>Slightly irritating to Skin according to OECD 404* (Nuero-Technics Inc, 2002)</p> <p>Practically non-irritating to Eyes according to OECD 405* (Nuero-Technics Inc, 2002)</p> <p>Acute Oral Toxicology, OECD 420, indicated LD₅₀ > 2.0g/Kg (Nuero-Technics Inc., 2002)</p> <p>*at in use dilutions</p>	<p>0.5 % AHP</p> <p>Biodegradable according to the OECD 302 B (Inherent Biodegradability Test)</p> <p>Not manufactured using APE (Alkyl Phenyl Ethoxylates) or NPE (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, Aluminum, Lead, Chrome & Nickel</p>
Phenol and Phenolics	<p>Although phenol (carboic acid) has been the first chemical category to be used as disinfectant, phenol derivatives, generally known as phenolics, are mainly used today. Derivatization includes:</p> <ol style="list-style-type: none"> 1. Para-Substitution of phenolic ring with an Alkyl chain 2. Halogenation 3. Combination of the above 4. Nitrophenols 5. Aminophenols <p>Due to the low solubility of phenol and phenolic compounds in water, these compounds are formulated in mixtures of water / alcohol</p>	<p>At higher concentrations, phenolics act as gross protoplasmic poison, penetrating and disrupting the cell wall and precipitating cell proteins. Lower concentrations of phenolics cause the death of micro-organisms by the inactivation of essential enzyme systems and leakage of essential metabolites from the cell wall. Germicidal efficacy increases with substitution of phenyl ring: o-Chloro -p-alkyl derivatives are the most powerful among the category</p> <p>References:</p> <ol style="list-style-type: none"> 1. <i>Disinfection, Sterilization and Preservation - Seymour S. Block</i> 1. <i>APIC Guidelines for Infection Control Practices - William A. Rutala</i> 	<p>Gram Positive Bacteria (> 500 ppm)</p> <p>Gram Negative Bacteria (> 2500 ppm) (**)(**)</p> <p>Mycobacteria</p> <p>Rickettsia</p> <p>Note: (*) the lower susceptibility of Gram Negative Bacteria to phenolics is due to the presence of an outer membrane on the bacterial wall, which is missing in Gram Positive Bacteria</p> <p>(**) As per the <i>Disinfectant Drug Guidelines - 1999 Edition, Health Canada</i>, in-use concentration of hard surface phenolic disinfectants must be > 700 ppm. This is valid for products which do not have a claim against: Spores, Mycobacteria, Human Immunodeficiency Virus and Hepatitis B Virus</p> <p>Reference: <i>Disinfection, Sterilization and Preservation - Seymour S. Block</i></p>	<p>Depending upon composition and formulation, it may vary from 5 to 10 minutes</p>	<p>Spores</p> <p>Weak and narrow efficacy against hydrophilic viruses (non-enveloped). This increases with the alkyl substitution of phenolic ring</p> <p>Weak efficacy against Fungi</p> <p>Organic matter interferes with germicidal efficacy. This influence on efficacy is derivative-dependable</p>	<p>Most of the phenolic disinfectants have a relatively high toxicity rating. They are easily absorbed through the skin and mucous membranes, which gives a toxic action on the kidneys, liver, CNS and immune system. The toxicity of phenolics increases with the degree of substitution of the phenol ring. (ATSDR - Agency for Toxic Substances and Disease Registry).</p> <p>Most of the phenolic disinfectants have an unpleasant odor, and being formulated in an alcoholic solution they are characterized by VOC content</p> <p>Phenol and phenolics are on most of the National Priority Lists identified by the EPA.</p> <p>Not indicated for disinfection of hard surfaces because they leave a residue that upon accumulation may cause skin irritation</p>	<p>Literature available shows that phenolics are regarded as biodegradable compounds. Biodegradability increases in the presence of soil.</p> <p>Some phenolics, such as o-Chloro - p-Phenylphenols, have a chemical structure similar to PCBs (polychlorinated biphenyls) which are toxic substances at levels of ppt and are being monitored by most of the Environmental Regulatory Agencies worldwide (EPA, Environment Canada, EU) for their high contaminant properties on water and food.</p>	<p>Poor.</p> <p>As per CGSB 2.11-Method 20.3</p>	<p>Phenolics cause damage on rubber and plastic, not indicated on aluminum and on optical instruments</p>	

*Always check material compatibility with manufacturer before using.