



PURE GREEN 24
BIO - BASED DISINFECTANT
NO SYNTHETIC CHEMICALS

READY – TO - USE
30 SECOND KILL / 24 HR RESIDUAL
EFFECTIVE AGAINST MRSA

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS :

Chemical characterization : Non-hazardous , citric acid - based liquid . None of the ingredients is considered hazardous according to the criteria of OSHA 29CFR1910.1200 and DOT Reg 49 CFR 172 . Ingredients are listed for informational purposes to assist emergency medical response personnel .

Component Disclosure (" PURE GREEN 24 ") :

Ingredient	CAS #	Weight %	Table Z - 1 - A			NTP, IARC, or OSHA
			TWA mg / m3	STEL mg / m3	CEILING mg / m3	Carcinogen
Citric Acid	77-92-9	< 5.0	NE	NE	NE	NO
Silver Ions	NA	0 .0030	NE	NE	NE	NO
Deionized Water	7732-18-5	>95	NE	NE	NE	NO

NOTE : Exact Percentages (concentrations) of compositions are withheld as trade secrets.

SECTION 4 : FIRST AID MEASURES

Description of Necessary Measures :

General Advice Under Extreme Exposure : May be irritating to eyes . May cause skin and respiratory tract irritation . Consult a Medical Physician

After Inhalation : Move to fresh air . Keep individual at rest in a position comfortable for breathing . Perform artificial respiration if not breathing . If breathing is difficult , use oxygen treatment . Consult a doctor if adverse conditions persist . (P 261)

After Skin Contact : Wash with plenty of mild soap and water ; followed by a warm water rinse . Apply a topical antiseptic agent to open wounds or broken skin . Thoroughly clean and dry contaminated clothes and shoes before re-use . If skin irritation or rash persists, seek medical attention . (P332+P313)

After Eye Contact : Prolonged exposure may cause mild irritation to the eye tissue if not removed . In case of extreme contact , immediately flush eyes with large quantities of warm running water for 15 minutes , lifting upper and lower lids occasionally . If easy to do, remove contact lenses . Continue water rinsing . (305+P351+P338) Do Not allow individual to rub or keep eyes closed . If eye irritation persists such as blinking , redness , or pain , seek medical attention . (P337 + P313) .

After Ingestion : May cause nausea . Rinse mouth with milk or water . DO NOT induce vomiting . If patient is fully conscious, continue to rinse mouth with milk or water and drink 2-3 glasses of milk or water . Never give anything by mouth if victim is conscious , rapidly losing consciousness, or is convulsing . If adverse conditions persist , call a Poison Control Center / Doctor / Physician, if necessary (P312) .

NOTE to Physicians : Treat symptomatically .

NOTE : According to FHSA Method 16 CFR 1500 this product should not be a skin or eye irritant . Prolonged contact with eyes may cause minor physical irritation . Ingredients used to make this product are not acutely toxic .

SECTION 5 : FIRE FIGHTING MEASURES :

Flashpoint (°F, °C , PMCC) : Non Established = <212°F

Suitable Extinguishing Media : Water , Water Spray , Dry Powder ,
 Foam , Carbon Dioxide (CO2)

Auto-Ignition Temperature : 653°F (345°C)

Hazardous Decomposition Products : Carbon Oxides

Flammability : Not Flammable or Combustible (Aqueous-based)

Unsuitable Extinguishing Media : None

Lower Flammable Limits : 8% at 149 °F (65 °C)

Upper Flammable Limits : Not Available

Special Protective Equipment for Fire Fighters : None



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SECTION 6 : ACCIDENTIAL RELEASE MEASURES

Exercise caution from slipping on leaked / spilled product . Mop up excess product . Rinse several times with water .

Leak and Spill Procedure : Small Spills : Contain spill . Absorb spill with an inert absorbent powder . Rinse area with water . Large Spills : Dike or dam spill . Pump to empty labeled containers or collect excess product by best means possible for disposal . Flush remaining product from spill with water to clean up residue . Absorb slurry with an appropriate liquid-binding absorbent (ie : sand, diatomite , universal binders , sawdust) . Dispose effected absorbent into empty, labeled containers for removal .

Environmental Precautions : Make best efforts to prevent entry into sewers and public waters . This product contains no reportable quantities of toxic chemicals subject to reporting requirements of Section 313 of SARA Title III Emergency Planning and Community Right-To-Know Act of 1968 and of 40 CFR Part 372 .

SECTION 7 : HANDLING & STORAGE REQUIREMENTS

KEEP OUT OF REACH OF CHILDREN

Precautions for Safe Handling : Read product literature, label , and SDS before use . Use product strictly according to label directions . Refer to the product label for specific organisms controlled by Pure Green 24 . Close container tightly when not in use . Wash hands and other exposed areas with soap and water before eating, drinking, smoking; or when leaving work . Provide adequate ventilation in storage area . Avoid contact with moist air and steam . Avoid personal contamination after a spill .

Precautions To Be Taken in Handling & Storing : Protect from freezing . Product shelf life is best retained by storing at 45 -100 ° F .

Hygiene Measures : Wash hands and forearms thoroughly after handling . Launder soiled, contaminated clothing before re-use .

Safe Storage Conditions : Keep in original container in a cool , well-ventilated place away from incompatible substances and open flames . Close container tightly when not in use .

Incompatible Products : Not Known

Incompatible Circumstances : Not Known

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

No special protection or precautions have been identified for using this product under directed consumer use conditions . The following recommendations are given for production facilities and for other conditions & situations where there is increased potential for accidental, large-scale or prolonged exposure .

Work / Hygienic Practices : Avoid direct eye and skin contact . If irritation occurs, flush thoroughly with water . When product is applied to a floor surface, signage should be used to indicate slippery areas until they are dry . Wash contaminated clothing before re-use .

Workplace Control Parameters : Relatively no effect if exposed in small amounts . Relative to other acidic materials, a single dose of this product is rarely toxic by inhalation or ingestion . When ingested in small amounts , a numbness of the mouth and/or irritation of the stomach can develop . After prolonged contact , eye irritation may occur . After repeated and / or prolonged contact with skin , dermatitis and skin sensitization may develop . Slight "redness" may develop on hands and forearms if individual has a history of dermal allergic reaction .

Engineering Controls : Use adequate , general ventilation to minimize exposure to mist and to keep; airborne concentrations low . Facilities storing or utilizing this material should be equipped with an eyewash station and safety shower .

Local Exhaust : Not required .

Exposure Limits :

<u>Chemical Name :</u>	<u>ACGIH :</u>	<u>NIOSH</u>	<u>OSHA – Final PELs</u>
Citric Acid (CAS # : 77-92-9)	None Listed	None Listed	None Listed

Exposure Controls :

Personal Protective Equipment : Not normally required . If prolonged or repeated seems likely, eye and hand protection is recommended .

Hand protection : Not necessary but good practice to wear chemical –resistant gloves

Eye Protection : Chemical goggles or safety glasses as described by OSHA Regulation 29 CFR 1910.133 or European Standard EN 166 .

Respiratory Protection : Not necessary but good practice to wear appropriate mask . Follow the OSHA Respirator Regulations found in 29CFR 1910.134 or European Standard EN 149 . Whenever necessary, always use a NIOSH or European Standard EN Approved Respirator .

Other Information : Do Not eat, drink, or smoke during use

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SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid	Color : Clear	Odor : Mostly Odorless
pH (as is) : 2.2 +/-0.05	Relative Evaporation Rate : Equivalent to Water	Melting Point : Undetermined
Freezing Point : < 32 °F, < 0 °C	Boiling Point : >212 °F	Flashpoint : ≥ 200 °F
Solubility in Water : Water Soluble	Specific Gravity (Water = 1) : > 1	Flammability : NA
VOC Content (% Wt .) : 0.00% (0.000 lbs/ gallon)	Vapor Pressure : NA	Vapor Density (Air = 1) : < 1
Partition coefficient : (n-octanol/water) Undetermined	Auto-ignition Temperature : Undetermined	Decomposition Temp. : Undetermined

SECTION 10 : STABILITY AND REACTIVITY

Reactivity : No Additional Information Available	Chemical stability : Stable under Normal Conditions
Possibility of Hazardous Reactions : Undetermined	Conditions to Avoid : Direct Sunlight , Extremely High or Low Temperatures
Incompatible Materials : High Alkalis / Sulfides	Hazardous Decomposition By-products : Carbon Monoxide , Carbon Dioxide
Oxidizing Agents , (inorganic) /Metal Nitrates /	Fumes Hazardous Polymerization : Should not occur
Alkali Carbonates/ Potassium Tartrate /Acetates/ Bicarbonates	

SECTION 11 : TOXICOLOGICAL INFORMATION

Information on Toxicological Effects : This product does not contain any known or anticipated carcinogens according to the criteria of the NTP Annual report on Carcinogens, OSHA 29 CFR 1900.1000 , SUBPART Z , or the IARC Monographs .

Likely Routes of Exposure :

Inhalation : No Irritant Effect

Skin Contact : No Irritant Effect . Sensitization possible through skin contact .

Eye Contact : Minor Irritating Effect

Ingestion : None Under Normal Use

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics : No Further Information

Available Delayed and Immediate Effects (Chronic Effects from Short and Long Term Exposure) : No Further Information

Measures of Toxicity : No Further Information Available

Teratogenicity, Mutagenicity : Does Not contain any recognized toxicants .

Reproductive Toxicity : Does Not contain any recognized toxicants .

Specific Target Organ Toxicity (Single Exposure) : Does Not contain any recognized toxicants .

Specific Target Organ Toxicity (Repeated Exposure) : Does Not contain any recognized toxicants .

Carcinogenic Categories : This product does not contain any substances that are considered by ACGIH, OSHA, or NTP to be human carcinogens .

NTP (National Toxicity Program) : None of the Ingredients are listed as of this date .

IARC (International Agency for Research on Cancer) : None of the Ingredients are listed as of this date .

OSHA (Occupational Safety and Health Administration) : None of the Ingredients are listed as of this date .

Acute Toxicity :

Product / Ingredients name	Result	Species	Exposure
Citric Acid (CAS# 77-92-9)	LD50	Rat	Oral = >5000 mg/ Kg
	LD50	Rat	Dermal = >5000 mg/ Kg
	Primary Eye Irritation	Rabbit	Category IV – Slightly Irritating



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TOXICOLOGICAL INFORMATION (continued)

Skin Corrosion / Irritation : Not classified
Skin Sensitization : Guinea Pigs – Not a contact sensitizer . Not classified , except for personal allergic reactions .
Serious Eye Damage / Irritation : Not classified
Respiratory Sensitization : Not classified
Neurotoxicity : None Known
Epidemiology : None Known

SECTION 12 : ECOLOGICAL INFORMATION



ENVIRONMENTAL ACCREDITATIONS : 100 % Bio-based
ECOTOXICITY (“ PURE GREEN 24 ”) : None
ECOTOXICITY (“ Citric Acid “ –See Below) :
Mobility : Completely Soluble
Persistence / Degradability Chemical Oxygen Demand (COD) : 750 (50 mg O₂ / g)
Biochemical Oxygen Demand Within 5 Days (BODS) : 625 (50 mg O₂ / g)
DIN 38412 Part 25 (DIN EN ISO 9880) : Readily biodegradable (98% after 2 days) *
Aquatic Toxicity (“ Citric Acid “ –See Below) :
DIN 38412 Part 15 (DIN EN ISO 7346) – Toxicity to Fish : 440 – 706 mg / L
DIN 38412 Part 5 (DIN EN ISO 7346) – Toxicity to Bacteria – 10,000 mg / L
Fish Toxicity : LC100-Goldfish-894 mg/L -Lifetime Exposure in Hard Water ; LD0 Goldfish-625 ,mg/L – Lifetime Exposure in Hard Water (Ellis, M.M. Detection and Measurement of Stream Pollution, 1937, 22, XLVII, 365 Brit. Fisheries Bulletin) ; Invertebrate Toxicity : LD100 Daphnia Magna- 120 mg/ L – Lifetime Exposure in Soft Water; LD0 Daphnia Magna -80 mg/L – Lifetime Exposure in Soft Water ; Toxicity Threshold : Pseudomonas Putida > 10 g / L ; Scenedesmus Quadricauda -640 mg/L ; Entosiphon Sulcatum 485 mg/L (Bringmann G et al Water Res.1980, 14, 231-241) .
Environmental (“ Citric Acid “ –See Below) :
Nitrification Inhibition . Nitrosomonas sp- 100 mg/L – No Inhibition of Ammonia Oxidation (Hockenbury, M.R. et al J.Water Pollution Control Fed. 1799, 49 (5) , 768-777) . Degradation Studies : 70-100% Removal by Activated Sludge at 20°C for 120 hr. (Muto, N. et al Kenkyou Hokoku - Kanto Gakuin Daigaku Kogakuku , 1987, 31 (2) , 257-266 Japan .
Other : BODS 0.420 ; BOD20-0.610 ; ThOD – 0.686 mg/L O₂ respectively (Meinck, F. et al Les Eaux Residuairees Industrielles 1970) ; Biodegradable (Ministry of International Trade and Industry (MITI) Report, 1984, Japan) .
Environmental (“ PURE GREEN 24 ”) : Readily degraded . “ Ionic Silver ” is degraded into inert elemental silver or insoluble silver complexes in the environment .
Terrestrial Toxicity :No Additional Information Available
Mobility in Soil :No Additional Information Available
OTHER ADVERSE EFFECTS :
Effect on Ozone LayerNo Additional Information Available
Effect on Global Warming :No Additional Information Available

SECTION 13 : DISPOSAL CONSIDERATIONS

RCRA Classification : Non-hazardous
Waste Disposal Recommendations : Dispose in safe manner in accordance with local / state/federal regulations .
Dispose of contents / container in accordance with local/regional/national/international regulations . Can be incinerated with conventional waste stream after consulting with the waste disposal facility operator and the pertinent authorities while adhering to the necessary regulations .
Ecology – Waste Materials : Avoid release into environment .
Recommended Cleansing Agents : Water Only



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SECTION 14 : TRANSPORT INFORMATION

UN Number (DOT, IMDG, IATA) Not Regulated
 UN Proper Shipping Name (DOT, IMDG, IATA) Not Regulated
 Transport Hazard Class(es) (DOT, IMDG, IATA) Not Regulated
 Packing Group (DOT, IMDG, IATA) Not Regulated
 Environmental Hazards : Marine Pollutant (Yes/No) NO - None Hazardous
 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code... Not Applicable
 Special Precautions for User : Not Applicable

SECTION 15 : REGULATORY INFORMATION

U.S. Federal Regulations : No Additional Information Available
 US-EPA (Environmental Protection Agency) None of the Ingredients are Listed
 TSCA Inventory : All components are listed . (TSCA Health & Safety Reporting List : None of the Ingredients are listed ; TSCA Chemical Test Rules : None of the Ingredients are listed ; TSCA Section 12b : None of the Ingredients are listed ; TSCA Significant New Use Rule : None of the ingredients has a SNUR .)
 CERCLA : No RQ was assigned to silver compounds . See 50FR13456 (April 4, 1985)
 ARA 302 / 304 : None of the ingredients has a RQ or a TPQ .
 OSHA : None of the ingredients are considered hazardous .
 SARA 311 / 312 : None of the ingredients are reportable .
 Clean Air : None of the ingredients are a Hazardous Air Pollutant, Class 1 Ozone Depleter, or Class 2 , Ozone Depleter .
 Clean Water Act : None of the ingredients are a Hazardous Substance, Priority Pollutant , or Toxic Pollutant .
 California Proposition 65 : None of the ingredients are listed .
 International Regulations :
 CANADA , EU-REGULATIONS No Additional Information Available

SECTION 16 : OTHER INFORMATION

HMIS Rating		GHS classification ratings order of severity differ from NFPA and HMIS	
HEALTH	0	HMIS/NFPA Hazard Ratings	GHS Hazard Categories
FLAMMABILITY	0	0= Minimal Hazard	Cat 1 = Severe Hazard
PHYSICAL HAZARD	0	1= Slight Hazard	Cat 2 = Serious Hazard
PERSONAL PROTECTION	B	2= Moderate Hazard	Cat 3 = Moderate Hazard
		3= Serious Hazard	Cat 4 = Slight Hazard
		4= Severe Hazard	Cat 5 = Minimal Hazard

DISCLAIMER : This document is intended to provide a brief summary of our present knowledge and guidance regarding the use of this material . The information set forth herein has been compiled from sources to be dependable and is believed to be accurate as of the date of issuance . This information is offered in good faith by HEALTHY CLEAN BUILDINGS and no warranty, expressed or implied, is made . The user assumes all liability for any damage or injury resulting from misuse, from any failure to adhere to recommended practices according to product label (and such), or from any hazards inherent in the nature of the product . This document shall not constitute a guarantee for any specific product features and shall not establish a legally valid contracted relationship.

Footnotes : CALC-Calculated; COR-Corrosive; CS-Cancer Suspect Agent; EST-Estimated; HMIS-Hazardous Material Identification System; NA-Not Applicable; ND-No Data ; NE – Data Not Established; OX- Oxidizer; PEL-Permissible Exposure Limit; PPI-Personal Protection Index ; STEL-Short Time Exposure Limit; TLV-Threshold Limit Value; TS-Trade Secret ; TWA-Time Weighted Average

EPA Recognized “ Pure GREEN 24 ” Organisms Killed

<u>Organism :</u>	<u>Kill Time :</u>	<u>Type :</u>
Pseudomonas aeruginosa	30 seconds	Bacteria
Salmonella enterica	30 seconds	Bacteria
Staphylococcus aureus	2 minutes	Bacteria
Listeria monocytogenes	2 minutes	Bacteria
Vancomycin resistant Enterococcus faecium (VRE)	2 minutes	Bacteria
Methicillin resistant Staphylococcus aureus (MRSA)	2 minutes	Bacteria
Community Associated Methicillin resistant Staphylococcus aureus (CA-MRSA)	2 minutes	Bacteria
Community Associated Methicillin resistant Staphylococcus aureu (CA-MRSA-PVL)	2 minutes	Bacteria
Escherichia coli O157 : H7	2 minutes	Bacteria
Acinetobacter baumannii	2 minutes	Bacteria
Campylobacter jejuni	2 minutes	Bacteria
Trichophyton mentagrophytes (Athlete's Foot Fungus)	10 minutes	Fungus
HIV type 1	30 seconds	Virus
Herpes Simplex Type 1	1 minute	Virus
Rotavirus	3 minutes	Virus
Human Coronavirus	3 minutes	Virus
Norovirus	10 minutes	Virus
Avian Influenza A	10 minutes	Virus
Influenza A	10 minutes	Virus
Rhinovirus	10 minutes	Virus
Polio Type 2	10 minutes	Virus

NOTE : Application Instructions -- Pure Green 24 is formulated to disinfect hard non-porous surfaces.

Pre-clean surfaces prior to using this product.