

VSE – Virus Sanitization Evaporator



Disinfecting Solution Information

www.VSEGlobal.com



Distributed by:
VSE Global
 11054 County Road 71
 Lexington AL 35648
PHONE: 256-229-5551
www.VSEGlobal.com

XTREME

Treatment Compound

For Commercial & Industrial Use Only

1. Effectively kills odor causing bacteria on food contact surfaces
2. Effectively kills odor-causing bacteria on non-food contact surfaces
3. Kills bacteria that cause spoilage, deterioration, or fouling materials on a variety of surfaces, textiles and paper products.
4. Kills bacteria that cause fouling in cooling towers
5. Kills odor causing bacteria
6. Effectively controls the growth of algae
7. Neutralizes and removes odors
8. Removes mold stains from surfaces such as patios, decks and most other structures.
9. Kills and controls microorganisms infectious only to animals

XTREME is exempt from EPA registration under minimal risks pesticides exemption FIFRA section 25(b).

Use only as Directed

HMS RATINGS

HEALTH	0	4-EXTREME 3-SERIOUS
FLAMMABILITY	0	2-MODERATE 1-SLIGHT
REACTIVITY	0	0-MINIMAL
PERSONAL PROTECTION EQUIPMENT	A	SAFETY GLASSES

ACTIVE INGREDIENTS..... **0.7%**
 Citric Acid..... 0.55%
 Lemon Grass Extract..... 0.15%
OTHER INGREDIENTS..... **99.3%**
 Purified Water, Commonly consumed food commodities
 Conforming to 40 CFR 180.950, Quillaja Saponin
TOTAL..... **100%**

EPA Reg No. This product is exempt from EPA registration under minimal risks pesticides exemption FIFRA section 25(b)

CONTAINER/VOL: _____

KEEP OUT OF REACH OF CHILDREN

CAUTION

STORAGE AND DISPOSAL

Storage: Store in a cool dry area out of reach of children.
Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available.

24 HOUR EMERGENCY NUMBER: CHEMTREC 800-424-9300

rev. 6/25/19



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Safe Handling and Use instructions:

Surfaces must be precleaned prior to treatment with XTREME.

Odor Control on Non-Food Contact Surfaces - Dilute 1:64. Recommended Contact Time -1 minute

Odor Control on Food Contact Surfaces –Dilute 1:32. Recommended Contact Time -1 minute

Control of Spoilage, Deterioration, and Fouling on a variety of surfaces –Dilute 1:10. Recommended Contact Time -2 minutes

Control of Bacteria in Cooling Towers - 100ppm dose recommended (100mg/liter)

Control of Odor Causing Bacteria - Dilute 1:64. Recommended Contact Time -1 minute

Control of Algae Growth - 20ppm recommended dose. Initial dose of 20 ppm can be followed as required with 5-10ppm doses.

Neutralization and Removal of Odors –Dilute 1:64. Recommended Contact Time -1 minute

Removal of Mold Stains from Surfaces –1:10. Recommended Contact Time -3 minutes

Control of Microorganisms Infectious only to animals –Dilute 1:32. *Recommended Contact Time -2 minutes

Use Only As Directed

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Do not eat or drink while using this product. Wash hands thoroughly after handling.

Avoid strong oxidizers. Dispose of in accordance with local, regional, federal, or international regulations as specified.

Xtreme

Technical Data Sheet



Xtreme-Treatment Compound

Xtreme-Treatment Compound is a highly concentrated compound that will safely replace toxic and corrosive chemistries which are commonly used today. Xtreme-Treatment Compound is extremely versatile for multiple water treatment applications including algae control, odor abatement, the destruction of odor causing bacteria on both food contact and non-food contact surfaces, the removal of mold and mildew from surfaces like decks and patios, and the elimination of micro-organisms which have been proven infectious to animals. It effectively and safely replaces the use of dangerous compounds like glutaraldehyde's, formaldehydes and quaternary amines. Additionally, Xtreme is instantly reactive giving it a huge advantage over traditional products that require logarithmic growth.

Xtreme-Treatment Compound ships non-hazardous, non-corrosive and is non-regulated as per the US DOT. The ingredients in Xtreme are listed under the EPA's Designed for Environment safer ingredient data base. Xtreme is EXEMPT from FIFRA registration as per 40 CFR 152.25(f). This exempt status offers its users a unique and major competitive advantage to commonly registered products.

FEATURES AND BENEFITS:

- X Effectively replaces glutaraldehydes, formaldehydes and quats
- X Immediately active in the treatment of recycled water, frac tanks, impoundments and lagoons
- X Significantly reduces BOD, COD, and TSS levels
- X Complete degradation resulting in the elimination of odors
- X Effectively kills odor causing bacteria on food contact surfaces
- X Effectively kills odor causing bacteria on non-food contact surfaces
- X Kills bacteria that cause spoilage, deterioration, or fouling materials on a variety of surfaces, textiles and paper products
- X Kills odor causing bacteria
- X Effectively controls the growth of algae
- X Neutralizes and removes odors
- X Removes mold stains from surfaces such as patios, decks and most other structures
- X Kills micro-organisms infectious to animals

TYPICAL PHYSICAL PROPERTIES:

Appearance and Color	Clear to colorless liquid
Initial Freeze Point	32°F (0°C)
Odor	Mild detergent odor
Solubility in Water	100%
Melting Point	N/A
Flashpoint	N/A
Specific Gravity	.98 ± .04

DIRECTIONS FOR USE:

Consult a Heartland Energy Group, Ltd. representative for application recommendations.

It is always recommended to performance test the compatibility of all fluid systems prior to use. Jar testing is always recommended.

Xtreme-Treatment Compound is compatible with other Heartland Energy Group, Ltd. chemistries.

STORAGE AND HANDLING:

Rinse empty container with water and discard as per federal, state and local guidelines.

PACKAGING:

Xtreme-Treatment Compound is packaged in 5 gallon to 275 gallon containers. Bulk quantities are available upon request.



Before Treatment



Post Treatment

Recommendations given in this data sheet are based on tests believed to be reliable. However, the use of the information is beyond the control of Heartland Energy Group, Ltd. and no guarantee, expressed or implied is made to the results obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage from the misuse of the product as such, or in combination with other materials. This bulletin is not to be taken as a license to operate under or recommendation to infringe any patent.



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Xtreme

Technical Data Sheet



Technical Data

BIODEGRADABLE: Yes/100% FORM: Liquid
ODOR: Mild Soapy Odor
COLD STABILITY : 30°F
DETERGENCY : Excellent PHOSPHATES: None
WETTING ABILITY: Excellent

FIFRA Exempt

This product is exempt from EPA registration under minimal risks pesticides exemption FIFRA section 25(b)
Xtreme Treatment Compound kills odor-causing bacteria on food contact surfaces and on non-food-contact surfaces.
Xtreme Treatment Compound kills bacteria that cause spoilage, deterioration, or fouling of materials on a variety of surfaces, textiles and paper products. Xtreme Treatment Compound kills bacteria that cause fouling in cooling towers.
Xtreme Treatment Compound kills odor-causing bacteria.
Xtreme Treatment Compound effectively controls the growth of algae.
Xtreme Treatment Compound neutralizes and removes odors.
Xtreme Treatment Compound removes mold stains from surfaces such as patios, decks and most other structures.
Xtreme Treatment Compound kills and controls micro-organisms infectious to animals.

Xtreme Treatment Compound is Exempt from FIFRA Registration.
Xtreme Treatment Compound is registered for sale in the State of Florida with the Florida Department of Agriculture and Consumer Services Bureau of Pesticides, Pesticide Registration Section.
The Florida Company ID for Heartland Energy Group is H0274001.
The Florida Department of Agriculture ID for Xtreme Treatment Compound is 0080274001.

DOT STATEMENT

Non-D.O.T. Regulated/Non-D.O.T. Hazardous
EXEMPT as per 49 CFR 173.154(d) (1) <6.25 mmpy

D. O. T. classifies a material to be corrosive and hazardous if it has a corrosion rate that exceeds 6.25 mmpy on SAE C1020 carbon steel or 7075-Y6 Aluminum.

Dilution Specification

Please refer to the product label.

Toxicity Studies

Toxicity Limits: Test Procedure OECD 202, 48 hr. LC 50 and LD 50 (rat oral: NON-TOXIC)

Mutagenicity Limits: OECD Guidelines Sec. 471
Chemicals: NON-MUTAGENIC

Dermal Irritation & Corrosion

A modified Draize method was used as described in OECD Guidelines for the Testing of Chemicals Sec. 404 and complies with the requirements of OECD Principles of GLP, Annex revised as of July 1992.

Xtreme Treatment Compound is classified as a "Non-Skin Irritant".

Biodegradation & Aquatic Safety

Test Procedure: Hach Reactor Digestion method for Waste Water and Sea Water. Hach Reactor Digestion Method is a semi-micro adaptation of the Standard Methods .

Xtreme Treatment Compound is 100% Biodegradable.

Classifications & Approvals

Exempt from EPA registration under minimal risks pesticides exemption FIFRA section 25(b)

D.O.T., IMO, IATA, IMDG - Non-Regulated

TDG - Non-Regulated to and through Canada

SARA 313 311/312 - This product does not contain any ingredients that are subject to the reporting requirements.

California Prop 65 - This product does not contain any ingredients known to the state of California to cause cancer, birth defects or any other reproductive harm.

FDA - Approved as Safe (GRAS)

USDA Authorization
A1, A2, A3, A4, A8, C3

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FLORIDA STATE PRODUCT REPORT

Company Number: 1637

HEARTLAND ENERGY GROUP, LTD.

626 VALLEY RIDGE COURT

GRAIN VALLEY MO 64029

Number of Currently Registered Products: 1



View the label in the US EPA Pesticide Product Label System (PPLS).



View the label in the Accepted Labels State Tracking and Repository (ALSTAR).

XTRIME

EPA Registration Number: 999999-99999



FL Product Number: 0000038463

Registration Year: 2020

Percent Active Ingredient

No ingredient data available.

Test Organisms	Dried Virus Control	Sample	Result	Log Reduction
Avian Infectious Bronchitis virus	6.42 Log ₁₀	A	<=0.5 Log ₁₀	>=5.92 Log ₁₀
		B	<=0.5 Log ₁₀	>=5.92 Log ₁₀
		C	<=0.5 Log ₁₀	>=6.0 Log ₁₀
Beaudette IB42	6.5 Log ₁₀	A	<=0.5 Log ₁₀	>=4.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=4.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.25 Log ₁₀
Avian Influenza A (H3N2) virus (Avian Reassortant) (ATCC VR-2072)	4.75 Log ₁₀	A	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=6.25 Log ₁₀
Avian Influenza A (H5N1) virus	6.75 Log ₁₀	A	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=6.25 Log ₁₀
Canine Coronavirus ATCC VR-809	4.5 Log ₁₀	A	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		B	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.0 Log ₁₀
Canine Distemper virus	4.75 Log ₁₀	A	<=0.5 Log ₁₀	>=4.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=4.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.25 Log ₁₀
Feline Picornavirus	6.25 Log ₁₀	A	<=0.5 Log ₁₀	>=05.75 Log ₁₀
		B	<=0.5 Log ₁₀	>=05.75 Log ₁₀
		C	<=0.5 Log ₁₀	>=05.75 Log ₁₀
Hepatitis B Virus	6.75 Log ₁₀	A	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=6.25 Log ₁₀
Hepatitis C Virus	4.5 Log ₁₀	A	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		B	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.0 Log ₁₀
Herpes Simplex Virus Type 1	5.75 Log ₁₀	A	<=0.5 Log ₁₀	>=5.25 Log ₁₀
		B	<=0.5 Log ₁₀	>=5.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.25 Log ₁₀
Hepatitis B Virus	5.06 Log ₁₀	A	<=0.27 Log ₁₀	>=4.79 Log ₁₀
		B	<=0.41 Log ₁₀	>=4.79 Log ₁₀
		Confirmatory B	<=0.27 Log ₁₀	>=4.79 Log ₁₀
Hepatitis B Virus	5.20 Log ₁₀	A	<=0.24 Log ₁₀	>=5.97 Log ₁₀
		B	<=0.42 Log ₁₀	>=5.79 Log ₁₀
		Confirmatory B	<=0.13 Log ₁₀	>=5.93 Log ₁₀
Hepatitis C Virus	6.21 Log ₁₀	A	<=0.5 Log ₁₀	>=5.0 Log ₁₀
		B	<=0.5 Log ₁₀	>=5.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.5 Log ₁₀
Herpes Simplex Virus Type 1	6.06 Log ₁₀	A	<=0.5 Log ₁₀	>=5.0 Log ₁₀
		B	<=0.5 Log ₁₀	>=5.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.5 Log ₁₀

Xtreme raw material Base was evaluated in the presence of 5% serum and 400 ppm hard water with 10 minute contact time and found to be effective against the above noted viruses on hard, nonporous environmental surfaces.

Herpes Simplex Virus Type 2	6.0 Log ₁₀	A	<=0.5 Log ₁₀	>=5.5 Log ₁₀
	5.75 Log ₁₀	B	<=0.5 Log ₁₀	>=5.5 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.25 Log ₁₀
Human Coronavirus	4.5 Log ₁₀	A	<=0.5 Log ₁₀	>=4.0 Log ₁₀
	4.5 Log ₁₀	B	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.0 Log ₁₀
Human Immunodeficiency Virus type 1 (HIV 1)	5.75 Log ₁₀	A	<=1.5 Log ₁₀	>=4.25 Log ₁₀
		B	<=1.5 Log ₁₀	>=4.25 Log ₁₀
		C	<=1.5 Log ₁₀	>=4.25 Log ₁₀
Infectious Bovine Rhinotracheitis virus	4.5 Log ₁₀	A	<=0.0 Log ₁₀	>=4.0 Log ₁₀
	4.75 Log ₁₀	B	<=0.0 Log ₁₀	>=4.0 Log ₁₀
		C	<=0.0 Log ₁₀	>=4.25 Log ₁₀
Influenza A virus	6.5 Log ₁₀	A	<=0.0 Log ₁₀	>=6.0 Log ₁₀
	6.0 Log ₁₀	B	<=0.0 Log ₁₀	>=6.0 Log ₁₀
		C	<=0.0 Log ₁₀	>=5.5 Log ₁₀
Pseudorabies virus	6.25 Log ₁₀	A	<=0.5 Log ₁₀	>=5.75 Log ₁₀
	5.5 Log ₁₀	B	<=0.5 Log ₁₀	>=5.75 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.0 Log ₁₀
Respiratory Syncytial virus ATCC VR-26	4.5 Log ₁₀	A	<=0.5 Log ₁₀	>=4.0 Log ₁₀
	5.0 Log ₁₀	B	<=0.5 Log ₁₀	>=4.0 Log ₁₀
		C	<=0.5 Log ₁₀	>=4.5 Log ₁₀
Transmissible Gastroenteritis virus	4.75 Log ₁₀	A	<=0.5 Log ₁₀	>=4.35 Log ₁₀
	6.25 Log ₁₀	B	<=0.5 Log ₁₀	>=4.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=5.75 Log ₁₀
Vaccinia virus	6.75 Log ₁₀	A	<=0.5 Log ₁₀	>=6.25 Log ₁₀
	6.5 Log ₁₀	B	<=0.5 Log ₁₀	>=6.25 Log ₁₀
		C	<=0.5 Log ₁₀	>=6.0 Log ₁₀

Xtreme raw material Base was evaluated in the presence of 5% serum and 400 ppm hard water with 10 minute contact time and found to be effective against the above noted viruses on hard, nonporous environmental surfaces.

Test Organisms	Dried Virus Control	Sample	Result	Log Reduction
Canine Parvovirus Type 2b	7.5 Log ₁₀	A	<=3.5 Log ₁₀	>=4.0 Log ₁₀
		B	<=3.5 Log ₁₀	>=4.0 Log ₁₀

Xtreme raw material Base was evaluated in the presence of 5% serum and 400 ppm hard water with 10 minute contact time and found to be effective against the above noted viruses on hard, nonporous environmental surfaces.



VS-1000 powerful formula was intentionally designed with today's threats in mind. VS-1000 is a multi-purpose, germicidal, virucidal, and fungicidal cleaner and deodorizer that disinfects or sanitizes (non-food contact surfaces), cleans, and removes malodors from hard, non-porous, inanimate surfaces.

VS-1000 is on the EPA LIST N of products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2.

Ideal for use with VSE Global Disinfecting Machines

**1 gallon of VS-1000 concentrate =
12.8 gallons of disinfecting fluid**
(comes out to \$9.60/gallon)



HYDROGEN PEROXIDE BASED DISINFECTANT

- No Toxicity
- No Asthmagens
- Non-Corrosive
- Biodegradable

MIXTURE RATIO:

10 OZ. VS-1000 PER 1 GALLON OF WATER

RECOMMENDED LOCATION USE:

VS-1000 is a cleaner and deodorizer that disinfects or sanitizes, cleans, and removes malodors in one labor saving step. Recommended for use in, but not limited to:

- Schools
- Hospitals
- Nursing Homes
- Hotels & Motels
- Office Buildings
- Locker Rooms
- Cruise Ships
- Airports
- Restrooms
- Churches
- Warehouses
- Universities
- Gyms
- Retail Stores
- Households
- Auditoriums
- Casinos
- Supermarkets



<p>DRY TIME FOR TYPICAL SPRAY APPLICATION WITH VSE SPRAY EQUIPMENT</p>	<p>Typically, VS-1000 dries within 2-5 minutes depending upon climate, air condition, humidity, etc. *Can achieve longer wet time with over-saturation application</p>
<p>DWELL/CONTACT TIME (DILUTE 10 OZ PER 1 GALLON OF WATER)</p>	<p>When using VS-1000, allow surfaces to remain wet for 5 minutes to kill HIV-1, Norovirus, and Feline Calicivirus. Allow a 10 minute contact time for all other organisms claimed.* *Refer to the VS-1000 label for additional organisms</p>

BEST PRACTICES: VS-1000 is ideal for use with VSE Global Disinfecting Machines. To protect yourself and others while using VS-1000, we advise you to take the following precautions:

- Wear goggles, basic utility mask, and gloves when handling VS-1000 Disinfecting Concentrate, including when making dilutions.

NOTE: ALWAYS USE PERSONAL PROTECTION EQUIPMENT WHEN SPRAYING DISINFECTING FLUIDS.

- After using VS-1000, wash your hands thoroughly with soap and water before eating or preparing food, drinking, chewing gum, using tobacco, or going to the restroom.
- Do NOT spray around food or drink. VS-1000 is harmful if swallowed.
- If VS-1000 Disinfecting Concentrate contaminates clothing, remove immediately and wash thoroughly before reuse.
- Avoid contact with eyes. Causes substantial but temporary eye injury.



VSE XTREME * BEST SELLER *
ANTI-MICROBIAL
1 gallon of xTREME concentrate = <u>64 gallons of disinfecting fluid</u>
<u>RETAIL: \$275</u> (equals \$4.30/gallon)
VOLUME DISCOUNTS AVAILABLE
Natural Formula EPA Exempt

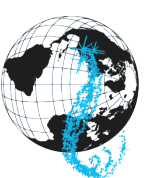
VS-1000
HYDROGEN PEROXIDE BASED
1 gallon of VS-1000 concentrate = <u>12.8 gallons of disinfecting fluid</u>
<u>RETAIL: \$122.80</u> (equals \$9.60/gallon)
VOLUME DISCOUNTS AVAILABLE
EPA List N*

*EPA List N of products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2



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SPECIAL EFFECTS