



pharmacal
RESEARCH LABORATORIES, INC.

TECHNICAL INFORMATION

FOR

CLIDOX[®]-S

EPA # 8714-8

A CHLORINE DIOXIDE BASED STERILANT

FOR DECONTAMINATION IN AN ANIMAL CARE FACILITY

PO BOX 369 • NAUGATUCK, CT 06770
(203) 755-4908 • 800-243-5350 • FAX (203) 755-4309
www.pharmacal.com

STERILIZATION: Articles should be thoroughly cleaned prior to treatment and immersed in CLIDOX-S at a 1:3:1 dilution for 5 hours at 25° C. Mix with water as follows: Dilute 1 part CLIDOX-S BASE into 3 parts tap water (20° - 30° C), then add 1 part CLIDOX-S ACTIVATOR, making 5 parts total. CLIDOX-S ACTIVATOR must be used with CLIDOX-S BASE. Example: Pour 100 mls. CLIDOX-S BASE into 300mls. tap water, then add 100 mls. CLIDOX-S ACTIVATOR for a total of 500 mls. CLIDOX-S solution will appear pale yellow. Once mixed, the solution should be used within 24 hours.

DISINFECTION: A 1:18:1 (1 part CLIDOX-S BASE into 18 parts tap water, then add 1 part CLIDOX-S ACTIVATOR) dilution may be used for disinfection at 20° C for 5 minutes. Once mixed, the solution should be used within 14 days.

Norovirus Dilution: A 1:5:1 dilution is required for the deactivation of Murine Norovirus MNV-1.CW1 (1 part CLIDOX-S BASE into 5 parts tap water, then add 1 part CLIDOX-S ACTIVATOR). Dilution may be used for disinfection at 20° C for 5 minutes. Once mixed, the solution should be used within 14 days.

IMPORTANT: Mix and let sit for 15 minutes before using.

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING

STERILIZATION: CLIDOX-S® solution can be used for the sterilization of hard, nonporous, inanimate, environmental surfaces such as stainless steel, plastics (such as: polycarbonate, polyvinylchloride, polypropylene, and polystyrene), tile, and glass. For use in laboratory animal breeding and research animal quarters for controlling cross-contamination of microorganisms infectious to these animals and humans from treated surfaces. Clean articles thoroughly prior to treatment and immersion in CLIDOX-S® at a 1:3:1 dilution for 5 hours at 25° C. Lumen of any hollow instrument must be flushed and filled. Aseptically transfer the treated articles to a sterile enclosed container for air drying. Judgment of the user according to individual techniques may require rinsing with sterile water as an alternative to air drying.

DISINFECTION: CLIDOX-S® solution can be used at the 1:18:1 dilution for 5 minutes at 20° C for the disinfection of hard, nonporous, inanimate, environmental surfaces such as stainless steel, plastics (such as: polycarbonate, polyvinyl chloride, polypropylene, and polystyrene), tile, and glass. Instruments can also be decontaminated with this product prior to sterilization. For use in laboratory animal breeding and research animal quarters for controlling cross-contamination of microorganisms infectious to these animals and humans from treated surfaces. Also for use in laboratories, dental and medical offices, hospitals, and other health care facilities. This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or (2) contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to preclean or decontaminate critical or semi-critical medical devices prior to sterilization. Kills HIV-1 (AIDS virus) on precleaned environmental surfaces/objects previously soiled with blood/body fluids in health care settings or other settings in which there is an expected likelihood of

soiling of inanimate surfaces/objects with blood/body fluids, and in which the surfaces/objects likely to be soiled with blood/body fluids can be associated with the potential for transmission of Human Immunodeficiency Virus Type 1 (HIV-1)(associated with AIDS).

FOR DISINFECTING HARD, NON-POROUS SURFACES AGAINST MURINE NOROVIRUS MNV-1.CW1: CLIDOX-S® solution can be used at the 1:5:1 dilution for 5 minutes at 20 ° C for the deactivation of Murine Norovirus MNV-1.CW1 on hard, nonporous, inanimate, environmental surfaces such as stainless steel, plastics (such as: polycarbonate, polyvinyl chloride, polypropylene, and polystyrene), glazed tile, and glass.

SPECIAL INSTRUCTIONS FOR CLEANING AND DECONTAMINATION AGAINST HIV-1 (AIDS VIRUS) OF SURFACES/OBJECTS SOILED WITH BLOOD/BODY FLUID:

Personal Protection: Disposable latex or vinyl gloves, gowns, face masks, or eye coverings as appropriate must be worn during all cleaning of blood/body fluids and during decontamination procedures.

Cleaning Procedures: Blood/Body fluids must be thoroughly cleaned from surfaces/objects before application of this product.

Contact Time: HIV-1 (AIDS virus) is inactivated after a contact time of 2 minutes at 23 ° C (room temperature). Although efficacy at a 2-minute contact time has been shown to be adequate against HIV-1 (AIDS virus), this is not sufficient for the non-HIV organisms listed on the label. Therefore, a 5-minute contact time must be used for disinfection against all listed, non-HIV organisms.

Disposal of Infectious Material: Blood/body fluids should be autoclaved and disposed of according to federal, state, and local regulations for infectious waste disposal.

APPLICATION: Soaking is the best method of application; however, the solution may be applied by any convenient means (i.e., mop, cloth, sponge, or spray). Surface must remain wet for a minimum of five minutes.

DECONTAMINATION OF INSTRUMENTS: Dismantle equipment, if possible, and rinse free of heavy soil and gross debris. Moderate amounts of organic soil will not lower the efficiency of CLIDOX-S®. Soaking is the best method of application; however, the solution may be applied by any convenient means (i.e., cloth, sponge, or spray). Allow surfaces to remain thoroughly wet with solution for five minutes. Rinse with fresh, DI or RO water within 8-hours of application to reduce the possibility of corrosion

CHEMICAL NEUTRALIZATION:

To dispose of large quantities of CLIDOX®-S solution, the CLIDOX®-S mixed solution should be de-activated prior to neutralization. CLIDOX DE-ACTIVATOR will de-activate the solution when used at 2oz per gallon of mixed CLIDOX®-S solution. Then pH Control can then be added to raise the pH of the solution prior to discharge. 1/8 to 1/4 ounce per gallon is a recommended starting point when determining required amount of pH Control. Good ventilation is mandatory. Always wear personal protective equipment when dealing with chemicals.

BASIC SOP GUIDELINE

This is only a basic guideline to help the customer set up their own SOP (Standard Operating Procedures). No two facilities are exactly the same, therefore, it is important that the customer design a procedure that will work for them. Please contact your PRL Representative if you have any questions. Refer to the master label for complete instructions.

1. **Remove all animals** and plant life from the areas to be decontaminated.
2. Obtain and wear all personal protective equipment necessary for procedure. Wear personal protective equipment including but not limited to a protective mask suitable for acid mist and chlorine if there is a possibility of exposure to mist.
3. Mix CLIDOX[®]-S (EPA REG # 8714-8) solution as directed. It is imperative that the mixing directions are followed accurately. Wait **fifteen** minutes before using.
4. If entire room is being disinfected, shut down HVAC system to the area(s) being treated. If total shut down is not possible, cover all in-going and out-going air ducts with plastic. Wipe down vent(s) with CLIDOX[®]-S solution before covering. Good ventilation is required for all other applications or procedures.
5. Cover any equipment or electrical outlets that should **not** be exposed to the CLIDOX[®]-S spray. Carefully wipe these surfaces with CLIDOX[®]-S solution before sealing.
6. Make sure **ALL surfaces are wet and remain wet for a minimum of five minutes.**
7. **IF ENTIRE ROOM WAS TREATED, THE ROOM SHOULD BE TOTALLY VENTILATED BEFORE RENTRY!!!!** If ventilation system was shut down during the procedure, it may be possible to reenter the room in 2 to 4 hours. If the ventilation system was not shut down during the procedure, reentry depends on the amount of air changes per hour that your ventilation system is designed for.
8. Remove plastic coverings. Pharmacal suggests that surfaces are wiped down with DI or RO water to remove any residue within an 8-hour period following application to reduce the possibility of corrosion. Isopropyl alcohol may be used to remove the salt residue in critical care areas and hoods.

MIXING DIRECTIONS FOR CLIDOX[®]-S SOLUTIONS EPA # 8714-8

COVERAGE:

One gallon of mixed solution will cover approximately 100 square feet.

APPLICATION METHODS:

Mop, cloth, sponge, spray.

1 Gallon = 128 ounces 29.57 Milliliters = 1 ounce

1 : 3 : 1 Dilution

1 part CLIDOX[®]-S BASE + 3 parts water + 1 part CLIDOX[®]-S ACTIVATOR = 5 parts
128 ounces divided by the five parts = 25.6

To mix 1 gallon:

CLIDOX [®] -S BASE:	1 part x 25.6 ounces =	25.6 ounces
Tap Water:	3 parts x 25.6 ounces =	76.8 ounces
CLIDOX [®] -S ACTIVATOR:	1 part x 25.6 ounces =	<u>25.6 ounces</u>
		128.0 ounces

OR

25.6 ounces x 29.57 mls/ounce. = 757 mls.

CLIDOX [®] -S BASE :	1 part x 757 mls. =	757 mls.
Tap Water:	3 parts x 757 mls. =	2271 mls.
CLIDOX [®] -S ACTIVATOR:	1 part x 757 mls. =	<u>757 mls.</u>
		3,785 mls.

After mixing, let sit for **15 minutes** before using.

Use solution within **24 hours** of mixing.

1 : 18 : 1 Dilution

To mix 1 gallon:

CLIDOX [®] -S BASE :	1 part x 6.4 ounces =	6.4 ounces
Tap Water:	18 parts x 6.4 ounces =	115.2 ounces
CLIDOX [®] -S ACTIVATOR:	1 part x 6.4 ounces =	<u>6.4 ounces</u>
		128 ounces

OR

6.4 ounces x 29.57 mls. = 189.25 mls.

CLIDOX [®] -S BASE :	1 part x 189.25 mls. =	189.25 mls.
Tap Water:	18 parts x 189.25 mls. =	3,406.50 mls.
CLIDOX [®] -S ACTIVATOR:	1 part x 189.25 mls. =	<u>189.25 mls.</u>
		3,785.00 mls.

After mixing, let sit for **15 minutes** before using.

Use solution within **14 days** of mixing.

1 : 5 : 1 Dilution

1 part CLIDOX[®]-S BASE + 5 parts water + 1 part CLIDOX[®]-S ACTIVATOR = 7 parts
128 ounces divided by the seven parts = 18.28

To mix 1 gallon:

CLIDOX [®] -S BASE:	1 part x 18.28 ounces =	18.28 ounces
Tap Water:	5 parts x 18.28 ounces =	91.4 ounces
CLIDOX [®] -S ACTIVATOR:	1 part x 18.28 ounces =	<u>18.28 ounces</u>
		127.96 ounces

OR

18.28 ounces x 30 mls. = 548.4 mls.

CLIDOX [®] -S BASE :	1 part x 548.4 mls. =	548.4 mls.
Tap Water:	5 parts x 548.4 ml.s =	2,742.0 mls.
CLIDOX [®] -S ACTIVATOR:	1 part x 548.4 mls. =	<u>548.4 mls.</u>
		3,838.8 mls.

After mixing, let sit for **15 minutes** before using.

Use solution within **14 days** of mixing.

TOXICOLOGY DATA

1:5:1 CLIDOX[®]-S DILUTION

Product Safety Labs performed the following toxicology tests following all EPA and GLP regulations.

INHALATION RESULTS:

US EPA Health Effects Test Guidelines, OPPTS 870.1300 (1998)

After establishing the desired generation procedures during pre-test trials, ten healthy rats (5/sex) were exposed to the test atmosphere for 4 hours. Chamber size distributions of the test substance were determined periodically during the exposure period. The animals were observed for mortality, signs of gross toxicity, and behavioral changes at least once daily for 14 days following exposure. Body weights were recorded prior to exposure and again on Days 7 and 14. Necropsies were performed on all animals at terminal sacrifice.

All animals survived exposure to the test atmosphere and gained body weight over the 14-day observation period. The gravimetric chamber concentration was 2.01 mg/L. Based on graphic analysis of the particle size distribution was measured with an Anderson Cascade Impactor, the mass median aerodynamic diameter was estimated to be 3.1µm.

In-chamber animal observations included ocular and nasal discharge, hunched posture, and hypoactivity. All animals recovered from these symptoms upon removal from the exposure chamber and appeared active and healthy for the remainder of the study. No gross abnormalities were noted for the animals when necropsied at the conclusion of the study (Day 14).

Conclusion: single exposure acute inhalation **LC50 of CLIDOX-S is greater than 2.01 mg/L** in male and female rats.

EPA Toxicity at this level would be considered a Category IV.

ACUTE ORAL TOXICITY:

FHSLA, 16 CFR 1500.3

Five male and five female rats were fasted for 18 hours and then individually and singly dosed by gavage with 5.0 g/kg body weight of test material. The rats were individually housed in stainless steel wire bottomed cages in an environmentally controlled room with a 12-hour light/dark cycle. Feed and water were provided ad-libitum after dosing. The rats were observed for mortality or other signs of gross toxicity for 14 days.

Observations: No mortalities. All rats appeared normal

Acute Oral LD50 to rats > 5.0g/kg.

Animal #	Sex	Body weight (g)		Actual Dose *	Mortality	Autopsy
		Initial	Final			
3457	M	267	293	1.3	E	NA
3458	M	240	258	1.2	E	NA
3459	M	248	276	1.2	E	NA
3460	M	242	271	1.2	E	NA
3461	M	225	251	1.1	E	NA
3462	F	260	252	1.3	E	NA
3463	F	251	271	1.3	E	NA
3464	F	265	279	1.3	E	NA
3465	F	242	277	1.2	E	NA
3466	F	243	277	1.2	E	NA

*Specific Gravity - 1.0

NA = Not applicable

E = Euthanized

PRIMARY EYE IRRITATION:

FHSLA 16 CFR 1500.42. Six healthy young adult albino rabbits were uniquely identified. One-tenth of a milliliter of test material was placed on the everted lower lid of one eye of each rabbit. The upper and lower lids were gently held together for one second before releasing, to prevent loss of test material. The other eye of each rabbit remained untreated and served as a control. Ocular lesions were evaluated by the method of Draize¹. The Draize scores were then classified according to Kay and Calandra². Lesions evaluated at 24, 48, and 72 hours.

1. Draize et al. J. Pharmacol. Exp. Ther. 83: 377-390, 1944.
2. Kay and Calandra, J. Soc. Cos. Chem. 13: 281-289, 1962.

Scale for Scoring Ocular Lesions

Cornea		Score
A.	Opacity-degree of density (area most dense taken for reading)	
	No Opacity	0
	Scattered or diffuse area, details of iris clearly visible	1
	Easily discernible translucent areas, details of iris slightly obscured	2
	Opalescent areas, no details of iris visible, size of pupil barely discernible	3
	Opaque, iris invisible	4
B	Area of Cornea involved	
	One quarter or less but not zero	1
	Greater than one quarter but less than half	2
	Greater than half but less than three quarters	3
	Greater than three quarters up to whole area	4
	A x B x 5	Total maximum = 80
IRIS		
A	Values	
	Normal	0
	Folds above normal, congestion, swelling, circumcorneal injection (any or all of these or combination of any thereof) iris still reacting to light (sluggish reaction is positive)	1
	No reaction to light, hemorrhage, gross destruction (any or all of these)	2
	A x 5	Total maximum = 10
Conjunctivae		
A	Redness (refers to palpebral and bulbar conjunctivae excluding cornea and iris)	
	Vessels normal	0
	Vessels definitely injected above normal	1
	More diffuse, deeper crimson red, individual vessels not easily discernible	2
	Diffuse beefy red	3
B	Chemosis	
	No swelling	0
	Any swelling above normal (includes nictitating membrane)	1
	Obvious swelling with partial eversion of lids	2
	Swelling with lids about half closed	3
	Swelling with lids half closed to completely closed	4
C	Discharge	
	No discharge	0
	Any amount different from normal (does not include small amounts observed in inner canthus of normal animals)	1
	Discharge with moistening of the lids and hairs just adjacent to lids	2
	Discharge with moistening of the lids and hairs and considerable area around the eye	3
	(A + B + C) x 2	Total maximum = 20

Draize Scores Rabbits

<u>MMTS</u>	<u>CLASSIFICATION</u>	<u>SYMBOL</u>
0.0 - 0.5	Non-irritating	N
0.6 - 2.5	Practically non-irritating	PN
2.6 - 15.0	Minimally irritating	M ₁
15.1 - 25.0	Mildly irritating	M ₂
25.1 - 50.0	Moderately irritating	M ₃
50.1 - 80.0	Severely irritating	S
80.1 - 100.0	Extremely irritating	E
100.0 - 110.0	Maximally irritating	M _x

Rabbit #	4750			4751			4752			4753			4754			4755		
Hours	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72
Cornea																		
A. Opacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Area	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
AxBx5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iris																		
A. Values	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ax5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjunctivae																		
A. Hyperemia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
B. Chemosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
C. Discharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(A+B+C) x2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
MMTS (24hrs)	0			0			0			0			0			4		

MMTS = Maximum Mean Total Score

Average MMTS (24hrs) is 0.7 and is considered to be practically non-irritating.

PRIMARY SKIN IRRITATION:

EPA ACUTE DERMAL TOXICITY LIMIT TEST, Protocol # 013/P32 (EPA/TSCA)

Purpose: To determine whether a single dose level of 2 grams of test substance per kilogram of bodyweight is toxic when applied dermally for 24 hours to the skin of rabbits.

Primary Skin Irritation Score

<u>Score</u>	<u>CLASSIFICATION</u>
0.0 - 0.5	Non-primary Irritant
0.6 - 2.0	Mild Primary Irritant
2.1 - 5.0	Moderate Primary Irritant
> 5.1	Severe Primary irritant

	Exposure Time (Hours)	Average Exposure Unit Value
Erythema and Eschar Formation		
Abraded Skin	24	1.17
DO	72	0.17
Intact Skin	24	0.00
DO	72	0.00
Subtotal		1.34
Edema Formation		
Abraded Skin	24	0.00
DO	72	0.00
Intact Skin	24	0.00
DO	72	0.00
Subtotal		0.00
Total		1.34
Primary Irritation Score		0.34

Summary of Results: Non-Primary Skin Irritant

EFFICACY STUDIES

TEST ORGANISM	EXPOSURE TIME	# CARRIERS	GROWTH
Salmonella choleraesuis CT = 6.3 x 10E6	5 min.	60	0
Staphylococcus aureus CT = 4.2 x 10E6	5 min.	60	0
Pseudomonas aeruginosa CT = 7.8 x 10E6	5 min.	60	0
			Growth at 10 days
Trichophyton mentagrophytes CONIDIA CT = 6.3 x 10E6	3 min.	10	0
			Growth at 21 days
Mycobacterium bovis Neutralizer CT = 5.3 x 10E7	5 min.	NA	No growth
Bacillus subtilis Loop CT=2.0 x 10E6	5 Hours	60	0
Clostridium sporogenes Loop CT=1.12 x 10E6	5 Hours	60	0
Bacillus subtilis Cylinder CT=3.84 x 10E6	5 Hours	60	0
Clostridium sporogenes Cylinder CT=3.95 x 10E6	5 Hours	60	0
Murine Norovirus MNV-1.CW1	5 min.		0

VIRUCIDAL EFFICACY

Organism: HIV-1

Method: USEPA Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-2 (f), and Section 91-30, (d), (e), November 1982.

Study Date: March 2 - 17, 1995

Summary of Results:

			VIRUS TITERS		
			(-Log ₁₀ TCID ₅₀ /0.05 ml)		
VIRUS	Organic Soil Load	Contact Time	Virus Control	Sample Lot #1	Sample Lot #2
HIV-1 RF strain	5% fetal bovine serum	2 Minutes	≥7.0	≤3.5	≤3.5

Conclusion:

CLIDOX[®]-S was VIRUCIDAL for human immunodeficiency virus (HIV-1) according to the criteria established by the US Environmental Protection Agency for registration and labeling of a disinfectant product as a Virucide.

Method: US Environmental Protection Agency, 1976, DIS/TSS-7

Organisms:

HERPES simplex virus 2 (G-strain)

Poliovirus 1 (Brunhilde-VR-ATCC-58)

Method: US Environmental Protection Agency, 1976, DIS/TSS-7

Test Date: November 12, 1981

Exposure Time: 3 minutes at 20°C

Type of Carrier: 60 mm Petri dish incubated for 7 days at 37°C (Letheen broth)

Percent inactivation: >99.9

CORROSION TEST SUMMARY

1:18:1 Solution

No corrosion was noted before immersion except on the tip of the blade on the blunt scissors. Sharpness of objects remained the same before and after immersions.

Immersion Temperature 25°C ± 1°C

OBJECT	Weight (grams) Before Immersion	Weight (grams) After Immersion	Corrosion After Immersion
8 Nickel plated coupons	25.67	25.57	Negative
Spatula	12.40	12.39	Negative
Scissors	48.57	48.55	Negative
Dental Probe	27.99	27.96	Negative
Dental Forceps	11.91	11.89	Negative
Hemostat	21.69	21.66	Negative
Scalpel Blade + handle	6.62	6.61	Negative
Dental Hand Piece	36.65	36.67	Negative
Endoscope			Negative
1 piece	50.36	50.34	Negative
2 piece	22.85	22.87	Negative

Immersion Temperature 40°C ± 1°C

OBJECT	Weight (grams) Before Immersion	Weight (grams) After Immersion	Corrosion After Immersion
8 Nickel Plated Coupons	25.67	25.57	Negative
Spatula	17.41	17.40	Negative
Dental Probe	48.37	48.43	Negative
Blunt Scissors	46.72	46.64	Same amount as before immersion
Scalpel Blade + handle	6.39	6.42	Negative
Hemostat	10.55	10.38	Negative
Dental Forceps	14.65	14.65	Negative
Dental Forceps	14.50	14.48	Negative
Small Scissors	25.68	25.78	Negative
Endoscope			Negative
1 piece	41.12	41.12	Negative
2 piece	41.23	41.41	Negative

CORROSION TEST SUMMARY

1:5:1 Solution

Immersion Test of 4 Coupons made of 304 stainless steel.

Exposure Time hours	Coupon 1	Coupon 2	Coupon 3	Coupon 4
1	None	None	None	None
4	None	None	None	None
12	None	None	None	None
24	None	None	None	None
36	None	None	None	None
48	None	Some (1)	None	Some (1)
60	None	Some (2)	None	None
96	Some	None	Some	Some
120	Some	Some	Some	Some

A single observer made the comparison of test coupons. Due to the single observer evaluation limitation, where there was uncertainty, a positive response was recorded.

Notes:

1. Deposit appears to be a salt deposit adjacent to wax.
2. Deposit appears to be a salt deposit.



745 Park Avenue
Dunkirk, New York, 14048

Phone 716-366-8165
microbiologists@aol.com

To Whom it May Concern,

Rather than test the efficacy of every single chemical germicide, against every single pathogen that exists, pathogens have been grouped into categories of increasing resistance to chemical germicides (1).

Enveloped viruses, such as vaccinia virus, are recognized as the easiest of all microorganisms to "inactivate" or "kill", and therefore they are at the very bottom of the list of resistance to chemical "germicides" as the Environmental Protection Agency (EPA) calls them. This was published by the American Society for Microbiology in its journal, Clinical Microbiology Reviews, and is presented in Figure 1 of reference (1), attached.

Not only have "low level" disinfectants been shown to kill enveloped viruses, but for over 20 years, even disinfectants below the "low level" disinfectant EPA claim have also been shown to kill enveloped (also known as "lipid" or "lipophilic") viruses (2).

In both the United States and Canada, a "high level" disinfectant is defined as a chemical germicide that is able to kill the much more resistant pathogen, *Mycobacterium tuberculosis*. Note how high it is on the list of resistance to chemical germicides in the attached Figure 1 of reference (1) Clidox is such a "High Level" disinfectant, and therefore there is no doubt that it can also kill enveloped viruses, like vaccinia virus, which are far, far below *M. tuberculosis* on the list of resistance...as previously stated, at the very bottom of the list!

If you have any questions concerning the above, please do not hesitate to contact me.

Sincerely,

Roger P. Orcutt, Ph.D.
Principal Consultant
Biomedical Research Associates

References:

1. McDonnell, Gerald and A. Denver Russell. 1999. Antiseptics and Disinfectants: Activity, Action, and Resistance. Clin. Micro. Rev., 12, (1):147-179.
2. Scott, Frederic W. 1981. Virucidal disinfectants and feline viruses. Am. J. Vet. Res., 41(3)410-414.

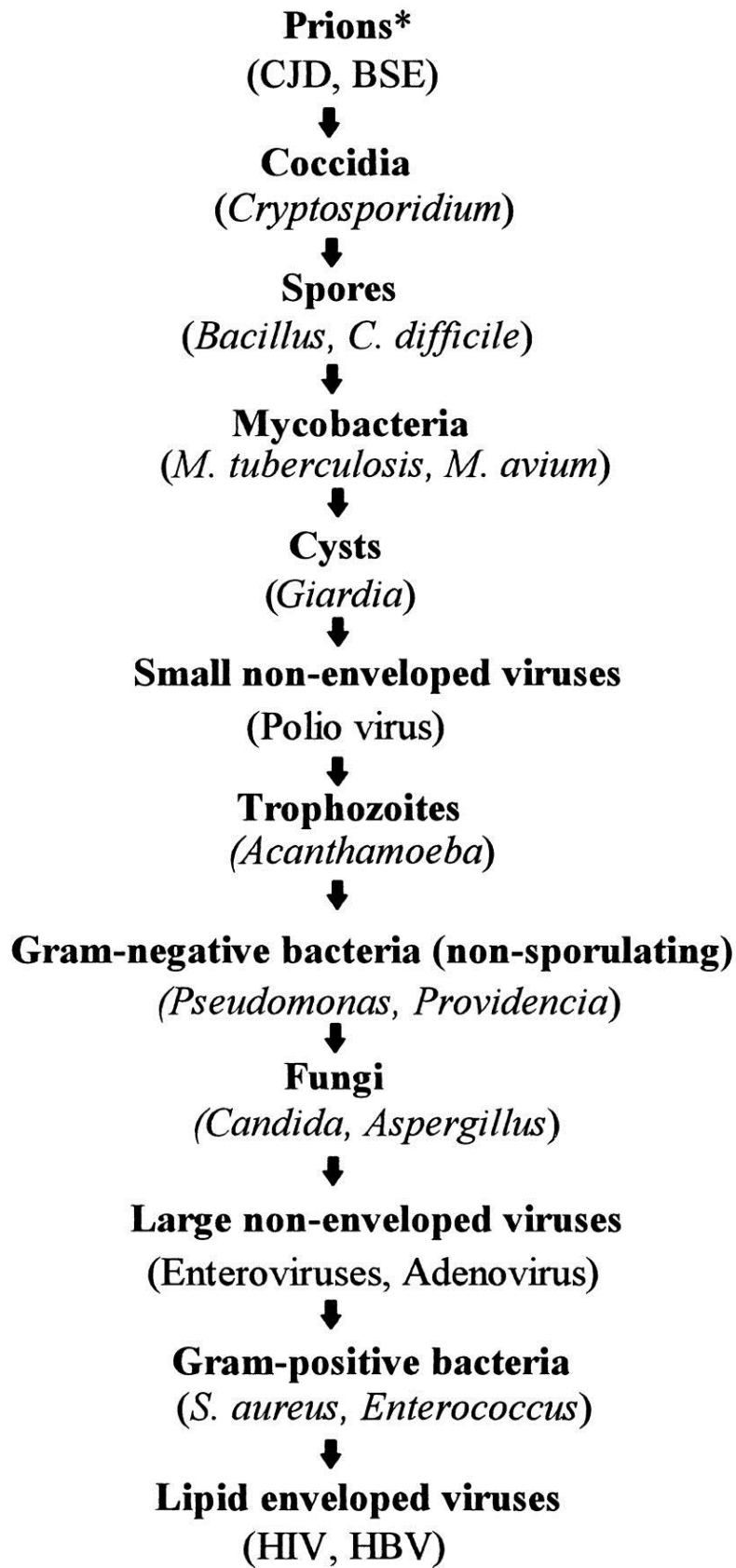


Figure 1 from: McDonnell, Gerald and A. Denver Russell. 1999. Antiseptics and Disinfectants: Activity, Action, and Resistance. Clin. Micro. Rev., 12, (1):147-179.

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

1. Identification

1.1. Product identifier

Product Identity

Clidox-S® Base

Alternate Names

Clidox-S® Base

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use

See Technical Data Sheet.

Application Method

See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name

Pharmacal Research Labs., Inc.
562 Captain Neville Dr.
Waterbury, CT 06705, USA

24 hour Emergency Telephone No.:

CHEMTREC (USA)

(800) 424-9300

IN CANADA CALL CANUTEC

(613) 996-6666

Customer Service: Pharmacal Research Labs., Inc.

203-755-4908, (800)-243-5350

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Skin Irrit. 2;H315

Causes skin irritation.

Eye Dam. 1;H318

Causes serious eye damage.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Danger

H315 Causes skin irritation.

H318 Causes serious eye damage.

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

[Prevention]:

P260 Do not breathe mist / vapors / spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P363 Wash contaminated clothing before reuse.

[Storage]:

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

There are no ingredients in this product which are classified as hazardous, and/or no hazardous ingredients above the GHS cut off percentage.

4. First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation

Move to fresh air.
Consult a physician if irritation of respiratory passages occur.

Eyes

Hold eye open and rinse slowly and gently with water for 15 - 20 minutes.
Remove contact lenses, if present, after the first five minutes, then continue rinsing eye.
Call a poison control center or doctor for treatment advice.

Skin

Take off contaminated clothing.
Rinse skin immediately with plenty of water for 15 - 20 minutes.
Call a poison control center or doctor for treatment advice.

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

Ingestion Call a poison control center or doctor for treatment advice.
Have person rinse mouth with water. If able to swallow, drink water to cause dilution.
Do not give anything by mouth to an unconscious person.
Do not induce vomiting unless told to do so by the position control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available.
CAUTION: May cause moderate eye irritation. Harmful if swallowed, or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing before reuse.
KEEP OUT OF REACH OF CHILDREN
See section 2 for further details.

Eyes Causes serious eye damage.

Skin Causes skin irritation.

5. Fire-fighting measures

5.1. Extinguishing media

Use media appropriate for surrounding area.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Hydrogen chloride and chlorine. Chlorine gas rate of decomposition increases with the concentration with temperatures above 85 degrees F (30C).

Do not breathe mist / vapors / spray.

5.3. Advice for fire-fighters

Approach fire from upwind to avoid hazardous vapors & toxic decomposition products. Use full protective clothing and self-contained breathing apparatus.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Safety Data Sheet

Clidox-S[®] Base



SDS Revision Date:

01/26/2015

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled:

Do not absorb in combustible materials. Contain spilled material in suitable containers or holding area. Dispose of in conformance with all federal, state, and local regulations.

“Empty” container warnings:

Do not reuse empty container. Triple rinse with water. Dispose of in conformance with federal, state, and local regulations.

7. Handling and storage

7.1. Precautions for safe handling

Keep in well ventilated area. Keep containers cool by spraying with water if exposed to fire.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Incompatible materials: Any acidic material, ammonia, urea, oxidizable materials and metals such as nickel, copper, tin, aluminum and iron.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s):

Keep out of reach of children.

8. Exposure controls and personal protection

8.1. Control parameters

There are no ingredients in this product which are classified as hazardous, and/or no hazardous ingredients above the GHS cut off percentage.

8.2. Exposure controls

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Chemical Splash goggles or face shield
Skin	Chemical resistant clothing such as coveralls/apron and boots should be worn. Chemical impervious gloves required.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Clear Liquid
Odor	Not Measured
Odor threshold	Not Measured
pH	11.5
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.01
Solubility in Water	Complete @ 1 ATM and 25 C
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

9.2. Other information

Physical properties are approximate or typical values and should not be used for precise design purposes.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid contact with strong acids. Avoid contact with combustible or acidic substances except as directed on the label. Will release chlorine dioxide.

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

10.5. Incompatible materials

Any acidic material, ammonia, urea, oxidizable materials and metals such as nickel, copper, tin, aluminum and iron.

10.6. Hazardous decomposition products

Hydrogen chloride and chlorine. Chlorine gas rate of decomposition increases with the concentration with temperatures above 85 degrees F (30C).

11. Toxicological information

Acute toxicity

There are no ingredients in this product which are classified as hazardous, and/or no hazardous ingredients above the GHS cut off percentage.

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

There are no ingredients in this product which are classified as hazardous, and/or no hazardous ingredients above the GHS cut off percentage.

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Disinfectants NOI	Disinfectants NOI	Disinfectants NOI
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable DOT Label: ---	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

Safety Data Sheet

Clidox-S® Base



SDS Revision Date:

01/26/2015

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

FIFRA This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution

Keep out of reach of children

For professional use only

Long term exposure to this product will corrode carbon steel

Solution may bleach clothing

Use in well ventilated areas

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification D2B E

US EPA Tier II Hazards

Fire: No

Sudden Release of Pressure: No

Reactive: No

Immediate (Acute): Yes

Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Safety Data Sheet

Clidox-S[®] Base



SDS Revision Date:

01/26/2015

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Pennsylvania RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

Not Applicable

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The information and recommendations contained herein are, to the best of Pharmacal's knowledge and belief, accurate and reliable as of the date issued. Pharmacal does not warrant or guarantee their accuracy or reliability, and Pharmacal shall not be liable for any loss or damage arising out of there use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

The hazardous materials identification system (HMIS) and national fire protection association ratings have been included by Pharmacal research laboratories INC. In order to provide additional health and hazard information. The ratings recommended are based upon criteria supplied by the developers of these rating systems, together with Pharmacal's interpretation of the available data.

End of Document

Safety Data Sheet Clidox-S® Activator



SDS Revision Date:

01/23/2015

1. Identification

1.1. Product identifier

Product Identity Clidox-S® Activator
Alternate Names Clidox-S® Activator

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use See Technical Data Sheet.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name Pharmacal Research Labs., Inc.
562 Captain Neville Dr.
Waterbury, CT 06705, USA

24 hour Emergency Telephone No.:

CHEMTREC (USA) (800) 424-9300
IN CANADA CALL CANUTEC (613) 996-6666
Customer Service: Pharmacal Research Labs., Inc. 203-755-4908, (800)-243-5350

2. Hazard(s) identification

2.1. Classification of the substance or mixture

Acute Tox. 5;H303 May be harmful if swallowed. (Not adopted by US OSHA)
Skin Corr. 2;H315 Causes skin irritation.
Eye Dam. 1;H318 Causes serious eye damage.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Danger

H303 May be harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

[Prevention]:

- P260 Do not breathe mist / vapors / spray.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves / eye protection / face protection.

[Response]:

- P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
- P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
- P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
- P310 Immediately call a POISON CENTER or doctor / physician.
- P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P363 Wash contaminated clothing before reuse.

[Storage]:

- P406 Store in corrosive resistant container with a resistant inner liner.

[Disposal]:

- P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycolic acid CAS Number: 0000079-14-1	10 - 25	Acute Tox. 4;H302 Skin Corr. 2;H315 Eye Dam. 1;H318	[1]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

- General** In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.
- Inhalation** Move to fresh air.

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

Eyes	Consult a physician if irritation of respiratory passages occur. Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.
Ingestion	Call a poison control center or doctor for treatment advice. Have person drink large quantities of water or fruit juice. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless told to do so by the position control center or doctor.

4.2. Most important symptoms and effects, both acute and delayed

Overview	CAUTION: May cause moderate eye irritation. Harmful if swallowed, or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN See section 2 for further details.
Eyes	Causes serious eye damage.
Skin	Causes skin irritation.
Ingestion	May be harmful if swallowed. (Not adopted by US OSHA)

5. Fire-fighting measures

5.1. Extinguishing media

Use media appropriate for surrounding area.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: When heated, emits highly toxic and corrosive fumes of hydrogen compounds and hydrogen gas.

Do not breathe mist / vapors / spray.

5.3. Advice for fire-fighters

None

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled:

Neutralize with lime or soda ash- flush to drain with plenty of water in accordance with all federal, state, and local regulations.

“Empty” container warnings :

Do not reuse empty container. Triple rinse with water. Dispose of in conformance with federal, state, and local regulations.

7. Handling and storage

7.1. Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Keep in well ventilated area - store above 10°C (50°F). Use goggles or face shield, rubber gloves, and boots where contact is expected.

Incompatible materials: Metal, glass, stoneware, alkali and strong concentrated acids.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

None

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000079-14-1	Glycolic acid	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000079-14-1	Glycolic acid	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

- Respiratory** Use NIOSH/MSHA approved acid respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
- Eyes** Chemical Splash goggles or face shield
- Skin** Chemical resistant clothing such as coveralls/apron and boots should be worn. Chemical impervious latex or other acid resistant gloves required.
- Engineering Controls** Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
- Other Work Practices** Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Clear Liquid
Odor	Not Measured
Odor threshold	Not Measured
pH	2
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	Non Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.03
Solubility in Water	Complete @ 1 ATM and 25C

Safety Data Sheet

Clidox-S[®] Activator



SDS Revision Date:

01/23/2015

Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

9.2. Other information

Physical properties are approximate or typical values and should not be used for precise design purposes.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Excessive heat and open flame. Contact with reactive metals and strong oxidizing agents to produce hydrogen, oxides or nitrogen.

10.5. Incompatible materials

Metal, glass, stoneware, alkali and strong concentrated acids.

10.6. Hazardous decomposition products

When heated, emits highly toxic and corrosive fumes of hydrogen compounds and hydrogen gas.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Glycolic acid - (79-14-1)	4,240.00, Rat - Category: 5	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

Classification	Category	Hazard Description
Acute toxicity (oral)	5	May be harmful if swallowed. (Not adopted by US OSHA)
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Glycolic acid - (79-14-1)	164.00, fathead minnow	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

Safety Data Sheet

Clidox-S® Activator



SDS Revision Date:

01/23/2015

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Disinfectants NOI	Disinfectants NOI	Disinfectants NOI
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable DOT Label: ---	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards			
IMDG	Marine Pollutant: No		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
FIFRA	This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label: Caution Keep out of reach of children For professional use only Long term exposure to this product will corrode carbon steel Solution may bleach clothing Use in well ventilated areas
Toxic Substance	All components of this material are either listed or exempt from listing on the TSCA

Safety Data Sheet
Clidox-S® Activator



SDS Revision Date:

01/23/2015

Control Act (TSCA) Inventory.

WHMIS Classification D2B E

US EPA Tier II Hazards

Fire: No

Sudden Release of Pressure: No

Reactive: No

Immediate (Acute): Yes

Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

N.J. RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Penn RTK Substances (>1%) :

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

Safety Data Sheet
Clidox-S® Activator



SDS Revision Date:

01/23/2015

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

The information and recommendations contained herein are, to the best of Pharmacal's knowledge and belief, accurate and reliable as of the date issued. Pharmacal does not warrant or guarantee their accuracy or reliability, and Pharmacal shall not be liable for any loss or damage arising out of there use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

The hazardous materials identification system (HMIS) and national fire protection association ratings have been included by Pharmacal research laboratories INC. In order to provide additional health and hazard information. The ratings recommended are based upon criteria supplied by the developers of these rating systems, together with Pharmacal's interpretation of the available data.

End of Document